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COST OF PROCESSING REPORTS OF DISCREPANCY: ADMINISTRATIVE COSTS AND HOLDING COSTS

TECHNICAL MANUAL

SEPTEMBER 1995

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INSIGHT THROUGH ANALYSIS

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TECHNICAL MANUAL

September 1995

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Cost of Processing Reports of Discrepancy

Part I: Administrative Costs

September 1995

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I. SUMMARY RESULTS

The administrative cost estimates for packaging ROD processing are given for each DLA Supply Center in Table 1. The cost estimates for shipping RODs are provided in Table 2. Each cost incorporates actions performed by DLA activities, service activities, and elements of DoD. For each center, the results have been appropriately averaged over the four possible levels of ROD initiation, based on discrepancy frequency at each level. Costs are separated into accumulated expected costs achieved for non-DLA activities (customers, retail supply points, service maintenance facilities), for DLA Activities (supply centers and DLA depots), and for the Defense Contract Management Command (DCMC) components.

Table 1

INDIVIDUAL CENTER ADMINISTRATIVE COST RESULTS
PACKAGING RODS

Center	Non-DLA Activities	DLA Activities	DCMC Activities	Expected Total Cost
DCSC	$22.74	$ 86.61	$11.40	$120.75
DESC	$13.55	$ 80.87	$10.97	$105.39
DGSC	$17.63	$132.78	$ 4.11	$154.52
DISC	$20.49	$ 70.85	$ 5.30	$ 96.64
DPSC (C&T)	$22.94	$138.01	$ 5.46	$166.41
DPSC (Med)	$10.86	$ 74.85	$12.19	$ 97.90

Table 2

INDIVIDUAL CENTER ADMINISTRATIVE COST RESULTS
SHIPPING RODS

Center	Non-DLA Activities	DLA Activities	DCMC Activities	Expected Total Cost
DCSC	$ 99.00	$56.75	$7.26	$163.01
DESC	$ 88.22	$58.54	$7.05	$153.81
DGSC	$ 93.79	$32.28	$2.76	$128.83
DISC	$ 98.60	$31.71	$3.67	$133.98
DPSC (C&T)	$101.67	$88.28	$7.16	$197.11
DPSC (Med)	$ 85.47	$28.69	$3.03	$117.19

II. METHODOLOGY

A. Approach

1. The numerical analysis concentrates on the flow of a ROD which is precipitated by the receipt of a discrepant item(s) by a customer or a retail or wholesale supply activity. The majority of the detailed computations are presented in the appendices. Major results have been reported in Section III for individual centers and all of DLA for both packaging and shipping RODs. Major results for each FSC managed by each supply center are contained in the last two appendices to this report.

2. Three independent analyses were conducted. The first analysis will measure the expected cost of a ROD to a complaint initiator. The second analysis will capture the cost of ROD processing for each supply center. The final analysis determines the expected cost for participation of activities within DCMC. The total expected cost of a ROD will be the sum of the three individual expected costs.

3. The first portion of the method for computing the administrative cost identifies the material flow of items managed by DLA, purchased from the contractor, and provided to the customer. The main participants in the supply system are identified and a relative frequency (or probability) is assigned to each of the branches in a diagram representing flow of material.

4. At each of the supply activities which play a part in the storage and distribution of DLA managed items (DLA depots, service maintenance facilities, supporting supply activities, and ultimate users), an individual cost analysis is conducted. This addresses the administrative costs incurred if a discrepant item is received by a given activity and if a ROD is subsequently initiated by this activity. (DLA depots are now known as DoD depots; the former DLA depots were considered separately in the 1990 RODs report and therefore in this update).

5. At each supply center, a detailed analysis is conducted which measures the degree of participation (via probabilities) for each center activity which plays a part in the processing and resolution of a ROD. These center agencies include the focal point, action point, comptroller's office, contracting and production directorate, and supply operations directorate. The application of activity costs and involvement probabilities produces the expected value for each center's participation. A cost is developed for each of the six supply centers and each of the two types of RODS.

6. The expected cost for DCMC elements is also measured via actual costs (if involvement occurs) and probabilities (reflecting relative participation). This cost is captured for each individual DLA-managed item identified by FSC.

7. For each of the three independent analyses, the individual activity costs are based on the time to perform identified tasks, the rank or wage grade of the person performing the tasks, the hourly pay rate (with leave, benefits, fatigue and other factors applied), and the relative frequency of the tasks performed. An expected cost of the total of all administrative actions applicable to a single ROD is the result of this study. Costs presented are based on FY 95 pay scales.

B. Development of Data

1. In the conduct of Project DLA-89-P81012, administrative and holding costs resulting from processing reports of nonconforming supplies, surveys were sent out to customer units, retail supply points and service maintenance facilities to solicit cost data for QDR administrative actions. Many of the actions submitted for a QDR (SF 368) are similar - sometimes identical - to actions performed for a ROD (SF 364). Much of the data developed for a QDR was therefore used for deriving ROD costs for the various levels of receipt and storage of supplies. However, additional information was required to obtain the frequency of each different type of ROD occurring within the various initiator echelons. This information was requested from customers, supply points, service maintenance facilities and DLA depots. The survey utilized for customer units is contained in Appendix A. The survey that was sent to supporting supply activities is located in Appendix B; the service maintenance facility questionnaire is in Appendix C.

2. The quantitative information utilized in this analysis arises from Special Purpose Data (SPD) standards for DLA activities; interviews with and visits to agencies that are involved with material and information flow; accumulated performance data submitted by the individual supply centers to the DLA Directorate of Quality Assurance; and historical data from the DLA Integrated Data Bank (DIDB) files and other locally constructed computer data files. Some results of the previous related study - the Cost of Nonconforming Supplies (DLA-94-P40158) - will be referenced here in various computational stages. Customer Depot Complaint System (CDCS) data, provided by each DLA supply center, was a valuable source of performance and transaction data for RODs processed by supply centers. Lastly, Quality Assurance data was employed to analyze appropriate quality efforts at the DCMC level.

3. The CDCS data base, used in many computations within this project, was screened to ensure that only appropriate records were used. A "filtering" or editing process was used for all CDCS records. Only "closed" records were utilized - those RODS which have been resolved. The Cause Code is a two-character designation entered for all CDCS records. The codes used for the analysis were "CN" (indicating contractor non-compliance) and "CS" (indicating subcontractor non-compliance). Another filter was the Document Type Code. Values of "6," "7," "8," and "9" - all representing various types of Reports of Discrepancy - were selected. Lastly, the Discrepancy Code was considered. The first digit of this two digit field was reviewed. The following table displays those codes which are of interest within this study.

Table 3

CDCS DISCREPANCY CODES

Code	General ROD Category	Specific ROD Type
P	Packaging	Packaging
C	Shipping	Poor Condition or Damage
D	Shipping	Supply Documentation
M	Shipping	Misdirected Item
W	Shipping	Wrong Item
O	Shipping	Overage in Shipment
S	Shipping	Shortage in Shipment

III. ANALYSIS

A. Material Flow

1. The flow of material from the contractor through the supply system is now reviewed. This is the first step in estimating the relative frequencies associated with finding and reporting discrepant material found at all levels in the supply chain.

2. The basic flow of material is displayed in Figure 1. A contractor may ship DLA items to a DLA depot or to any of the service maintenance facilities. It may be economically advantageous and more efficient if the contractor ships directly to an appropriate retail supply activity - the source of supply for the ultimate user or requisitioner. This certainly applies in the situation in which items are not normally stocked at DLA depots. These types of supplies are purchased by DLA for direct delivery to customers.

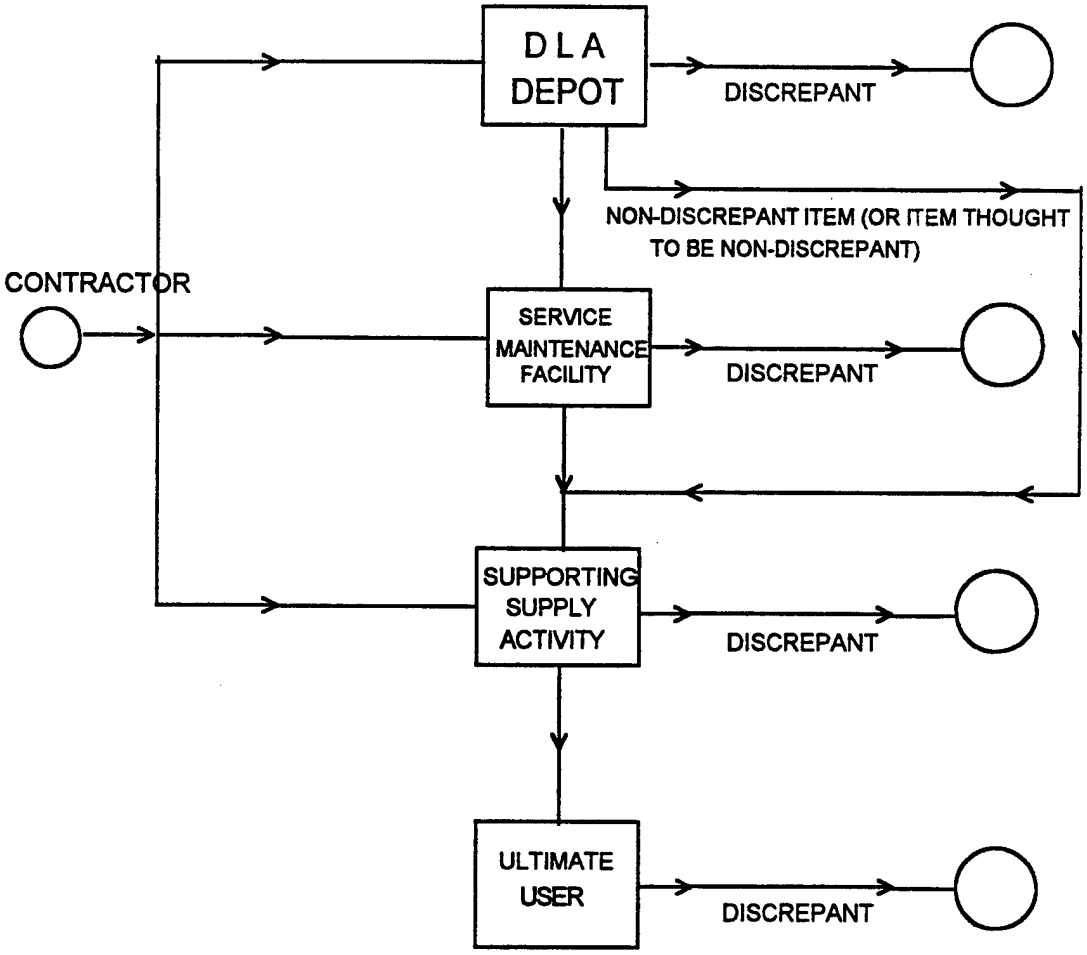
3. A DLA depot may ship to a service maintenance facility or to a retail support activity. A DLA depot may also discover a discrepant item during inspection by the receiving division. There may also be a situation in which one DLA depot will ship supplies to another DLA depot in response to requirements from a particular supply center. This latter cause is not considered in this study. Data that is utilized in this analysis has been "purified" to delete these cross-leveling occurrences. Additionally, a depot periodically may ship to itself. For example, individual components stored at a DLA depot are ordered by this depot to configure a special package which, in turn, is shipped from this same depot. This type situation is also not considered.

4. A service maintenance facility, receiving supplies directly from a contractor or DLA depot, may ship an item to a supporting supply activity. However, a service maintenance facility may also discover a discrepant item and, depending on the type of discrepancy, may prevent shipment to other supply activities. Cross-leveling actions among service maintenance facilities are ignored in this study.

Figure 1

FLOW OF MATERIAL

(Discrepant Supplies Unless Otherwise Noted)



5. A supporting supply activity or retail supply point may receive items from a DLA depot, a service maintenance facility, or directly from a contractor. In any case, it ships to the ultimate user or the requisitioner of the item - this requisitioner will actually use the item for the purpose it was designed. Some examples of retail supply activities are Army supply and service companies, Air Force base supply activities, or Navy supply ships. Both the supporting supply activities and the ultimate users have the opportunity to discover a discrepant item.

6. The first step of the analysis was the determination of the proportions (probabilities) of discrepancies at each level of supply. These figures were assessed in Appendix E for packaging RODs and Appendix G for shipping RODS. Results are given in the following table.

Table 4

DISCREPANCY PROBABILITIES

Supply Level ROD Initiator Type	Probability of Packaging Discrepancy	Probability Shipping Discrepancy
Customer (Ultimate User)	.000176	.011111
Retail Supply Point	.000131	.007571
Service Maint. Facility	.008055	.039929
DLA Depot	.037960	.016850

7. Complete numerical analyses that describe the material flow to various supply levels via branch probabilities are provided in Appendices D and F for, respectively, packaging RODs and shipping RODS. Those analyses produce interim results that are utilized in Appendices E and G to describe nonconformance at each supply level for each supply center for the two types of RODS. The probability that a discrepant item, managed by a particular supply center, is found at a given level of supply - regardless of the series of distribution schemes the item followed to arrive there - is developed in Appendix E for packaging RODs and displayed in Figure 2 via a "tree diagram." The similar set of probabilities for shipping RODs are generated in Appendix G and displayed in Figure 3.

8. As an illustration with the focus on the first set of branches on the left of Figure 2, if a discrepant item which has a packaging problem appears somewhere within the supply system, the probability that it is an item managed by DESC is .207432. Each probability in this figure is "conditional" on other events or facts. Highlighting the branches on the right of the figure, given that a packaging discrepancy appeared and given that the item is a DESC managed item, the probability that it was detected at a service maintenance facility is .064924.

Figure 2

PROBABILITY OF PACKAGING ROD INITIATION

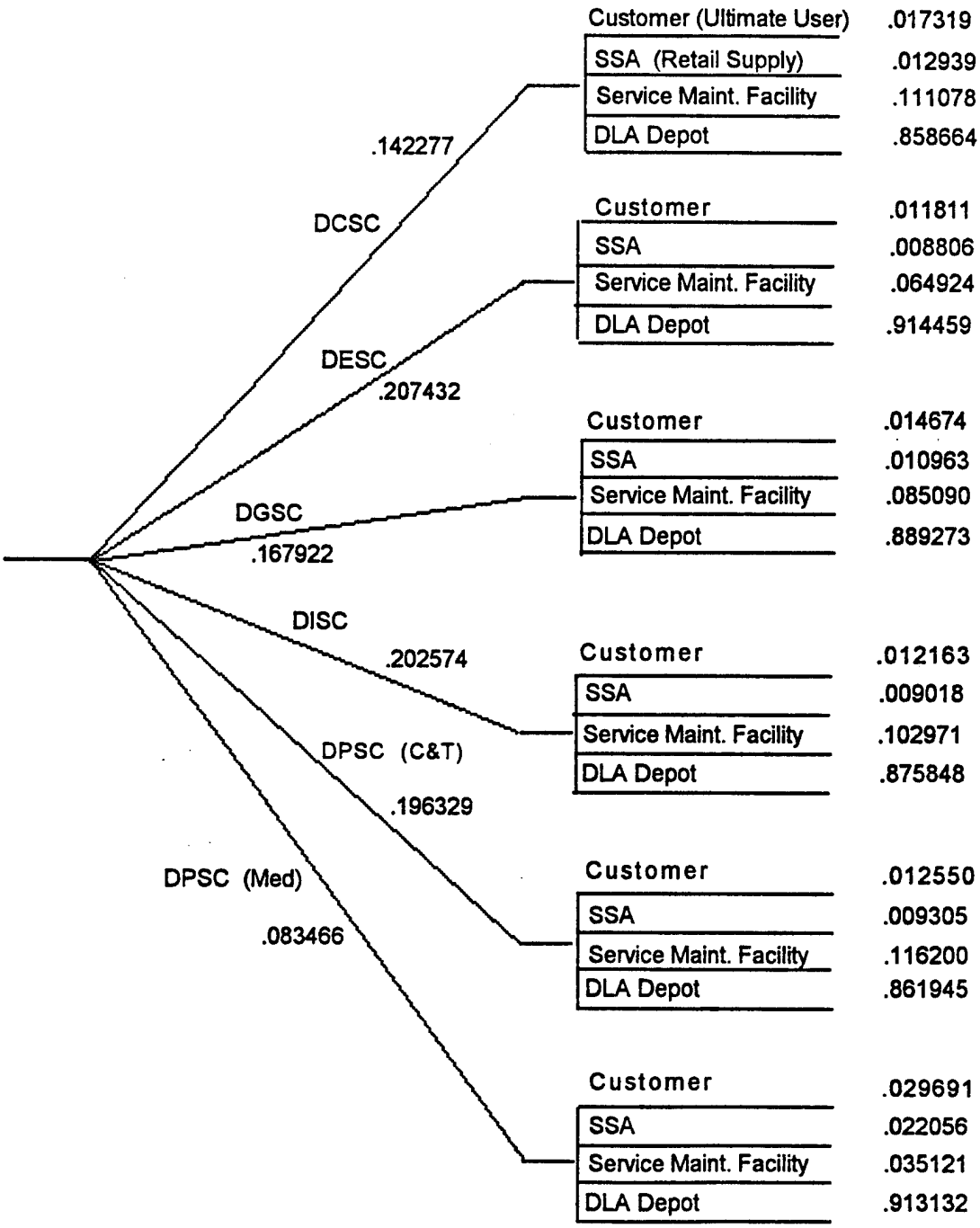
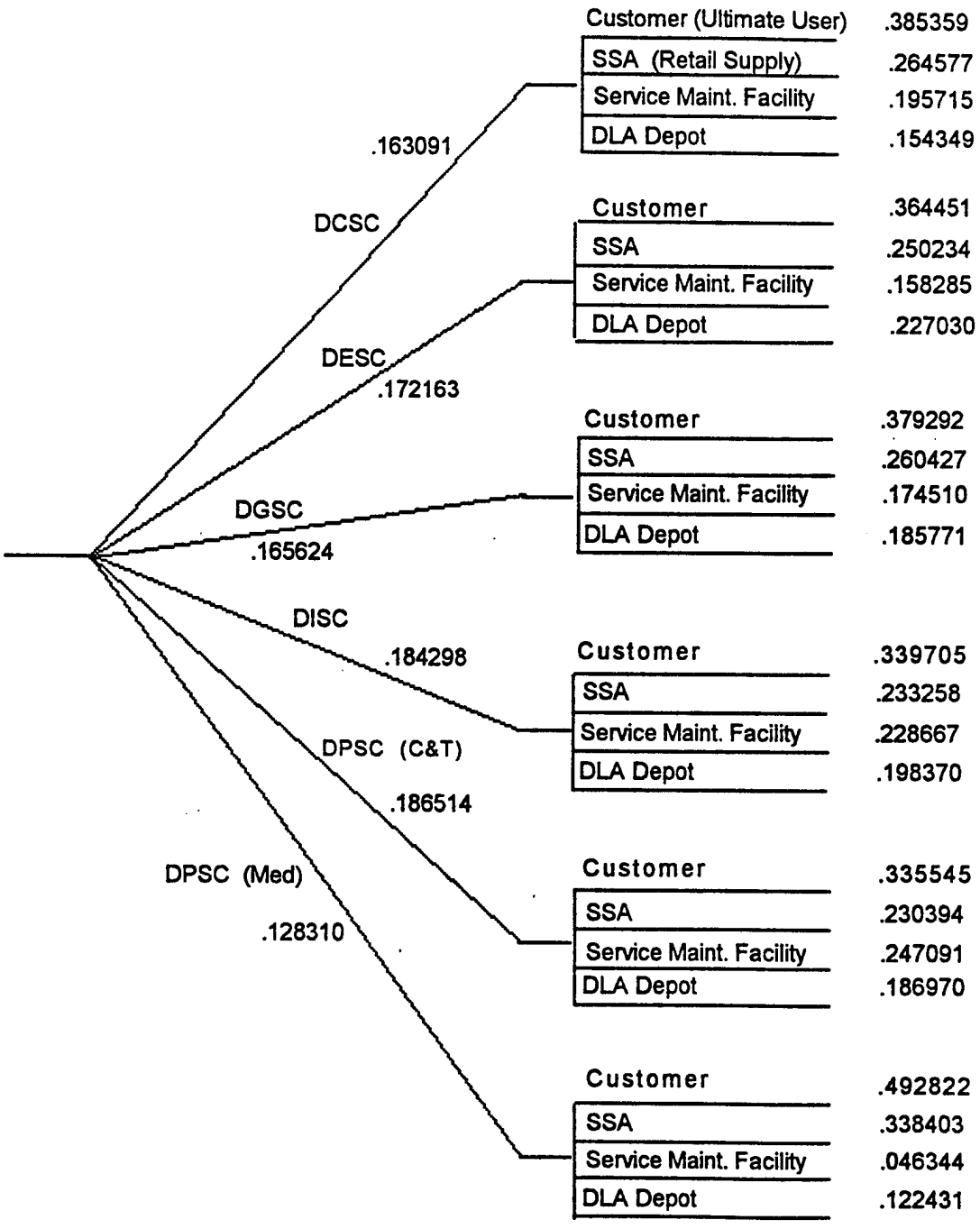


Figure 3

PROBABILITY OF SHIPPING ROD INITIATION



B. Cost Methodology

1. Once a discrepant item is discovered, the reporting processes commences. Costs are accumulated at many and diversified activities as the ROD (both packaging and shipping) proceeds through the administrative chain. The total of the ROD processing costs certainly depends upon where the ROD begins. In this study, the total cost will vary depending upon what supply center is affected.

2. Any ROD process beginning at any supply level may involve many other staff activities. The number of participants in the complaint flow depends upon the complexity of the problem, impact on customers, dollar value of the deficient items, and other factors. These staff activities may involve focal points, action points, contracting directorates, comptroller elements, contract administrative representatives, and many other organizations and individuals. Costs associated with these elements will be developed in the next sections.

3. The "expected cost" value of a particular supply level's involvement is simply the product of the calculated probability (representing the participants involvement) and the administrative cost experienced given that supply level is involved. The expected cost of all administration performed in the initiation of and response to a ROD is computed by evaluating the expected cost of each activity within a ROD processing scenario, and subsequently summing these costs.

4. Similar actions take place at each supply center when a ROD surfaces to that level. The procedures followed adhere to tasks defined in the appropriate SPD standards. However, since each center is oriented to major commodity groupings, some variability in expended complaint processing time may be inherent. For example, the administrative and investigative efforts required for hardware items (managed by DCSC, DESC, DGSC and DISC) may be substantially different than those necessary to resolve complaints for an item with little or no technical specifications. As a result, each center's activities are individually analyzed.

5. For each item (identified by FSC), the total expected administrative cost is analyzed (and reported) by component costs. The expected cost of non-DLA activities and DLA depots are derived through the probability analyses already explained. The remaining cost components are subdivided into costs directly borne by DLA (specifically, the supply centers) and borne by DCMC elements.

6. Specific cost determination methods are now discussed. To obtain a single figure that represents complaint initiator costs for both non-DLA activities (customer, supply points and service maintenance facilities) and DLA wholesale supply activities (DLA depots), the probabilities from both Figures 2 and 3 are used in combination with the activity costs (determined below). Cost designations are defined in the following fashion:

a. "U" is the cost of all actions performed by the ultimate user or customer for ROD processing;

b. "A" is the cost of all actions performed by a retail supply activity for ROD processing;

c. "S" is the cost of all actions performed by a service maintenance facility for ROD processing; and

d. "D" is the cost of all actions performed by a DLA depot for ROD processing.

Table 5 provides the expected cost computations for packaging RODs and Table 6 displays expected cost formulas for shipping RODS.

Table 5

EXPECTED COMPLAINT INITIATOR COSTS (EC) OF A PACKAGING ROD

(By Center)

			Customer	Retail Supply Pts	Service Maint. Facilities	DLA Depots
DCSC	EC	=	0.017319*U	+ 0.012939*A	+ 0.111078*S	+ 0.858664*D
DESC	EC	=	0.011811*U	+ 0.008806*A	+ 0.064924*S	+ 0.914459*D
DGSC	EC	=	0.014674*U	+ 0.010963*A	+ 0.085090*S	+ 0.889273*D
DISC	EC	=	0.012163*U	+ 0.009018*A	+ 0.102971*S	+ 0.875848*D
DPSC (C&T)	EC	=	0.012550*U	+ 0.009305*A	+ 0.116200*S	+ 0.861945*D
DPSC (Med)	EC	=	0.029691*U	+ 0.022056*A	+ 0.035121*S	+ 0.913132*D

Table 6

EXPECTED COMPLAINT INITIATOR COSTS (EC) OF A SHIPPING ROD

(By Center)

			Customer		Retail Supply Pts		Service Maint. Facilities		DLA Depots
DCSC	EC	=	0.385359*U	+	0.264577*A	+	0.195715*S	+	0.154349*D
DESC	EC	=	0.364451*U	+	0.250234*A	+	0.158285*S	+	0.227030*D
DGSC	EC	=	0.379292*U	+	0.260427*A	+	0.174510*S	+	0.185771*D
DISC	EC	=	0.339705*U	+	0.233258*A	+	0.228667*S	+	0.198370*D
DPSC (C&T)	EC	=	0.335545*U	+	0.230394*A	+	0.247091*S	+	0.186970*D
DPSC (Med)	EC	=	0.492822*U	+	0.338403*A	+	0.046344*S	+	0.122431*D

7. If a single quantity is needed that represents the cost of a typical ROD to a complaint initiator - averaging over all supply levels and all supply centers - each center's expected cost can be weighted appropriately using the leftmost probabilities in Figures 2 and 3. These probabilities reflect the relative occurrences of discrepant items for each center (given that a packaging or shipping problem for each center appeared somewhere within the supply system). The average "DLA-wide" packaging ROD costs, combining the information in Table 5 and Figure 2, to the initiator becomes:

0.142277*EC (DCSC Packaging ROD) + 0.207432*EC (DESC Packaging ROD)

\+ 0.167922*EC (DGSC Packaging ROD) + 0.202574*EC (DISC Packaging ROD)

\+ 0.196329*EC (DPSC(C&T) Packaging ROD) + 0.083466*EC (DPSC(Med) Packaging ROD)

Similarly, the "DLA-wide" shipping ROD cost to the initiator, using the probabilities from Figure 3 and the notation from Table 6 is:

0.163091*EC (DCSC Shipping ROD) + 0.172163*EC (DESC Shipping ROD)

\+ 0.165624*EC (DGSC Shipping ROD) + 0.184298*EC (DISC Shipping ROD)

\+ 0.186514*EC (DPSC(C&T) Shipping ROD) + 0.128310*EC (DPSC(Med) Shipping ROD)

8. The expected cost for all ROD processing for each of the remaining groups of activities - DLA supply center activities and DCMC activities - will be addressed in detail in the appendices. The total expected DLA cost will be the sum of the expected cost for DLA depots and the expected cost of involvement of all DLA supply center activities. The cost of ROD processing - both packaging and shipping RODs - is the sum of three total expected costs for non-DLA activities, DLA activities and DCMC activities.

C. ROD Resolution Process

1. The reporting and resolution process is extremely complicated. The primary reason for this complexity is to ensure that the resolution occurs at the lowest level possible, that complete and correct information is always transferred from one activity to another, and that the ROD initiator is satisfied in the most expeditious fashion. The flow of the ROD and other management information is depicted in Figure 4. This is a very streamlined process as depicted. In reality, there are many other lines of information transfer that commonly occur in the resolution of a discrepancy. The complete process is now discussed.

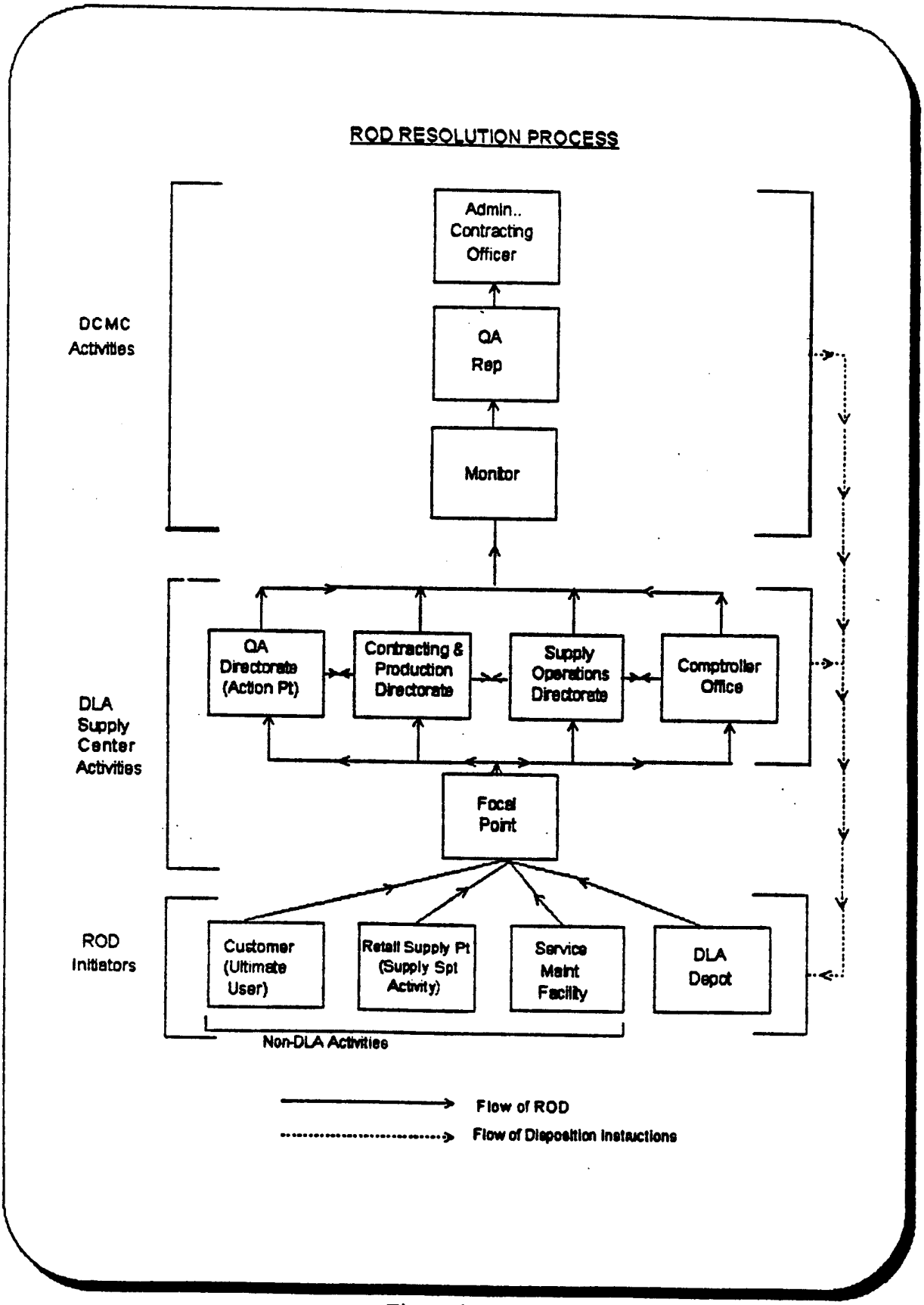

ROD RESOLUTION PROCESS
DCMC Activities
Admin.. Contracting Officer
QA Rep
Monitor
DLA Supply Center Activities
QA Directorate (Action Pt)
Contracting & Production Directorate
Supply Operations Directorate
Comptroller Office
Focal Point
ROD Initiators
Customer (Ultimate User)
Retail Supply Pt (Supply Spt Activity)
Service Maint Facility
DLA Depot
Non-DLA Activities
Flow of ROD
Flow of Disposition Instructions

Figure 4

2. The process may begin with a customer activity. This is the ultimate user of the item - the unit or organization that directly feels the effects of a receipt of a nonconforming item - since this customer's need for the item had placed a demand on the supply system. Upon receipt of a nonconforming item, the customer performs tasks that are detailed in the survey contained in Appendix A.

3. The supporting supply activity or retail supply point may also initiate its own report if a discrepant item is detected upon receipt. The supporting supply activity receives, stores, and issues stock at the retail level directly in support of an intended user. Detailed functions entailed with the processing of a ROD are given in the survey at Appendix B.

4. A service maintenance facility operating at the wholesale supply level may receive and issue DLA managed items. A service maintenance facility, therefore, may detect a discrepant item and initiate a ROD. Detailed tasks normally performed at a service maintenance facility are outlined by the survey in Appendix C.

5. A DLA depot communicates a quality problem directly to a particular supply center depending upon the commodity affected. The actions that a depot normally takes are detailed in DLA Special Purpose Data (SPD) Standards 3271 and 3272. Additionally, the flow of information and material within Defense Depot Richmond was utilized as representative of all DLA depots in the cost analyses.

6. The focal point at the supply center receives all RODs directed to the center, screens them for completeness, sets up accountability for them, and then passes them to the action point for investigation and resolution. The focal point enters the ROD into the automated CDCS. The focal point functions are provided in DLA SPD Standard 4634.

7. The action point, in most cases, acts as a pivotal organization in the ROD resolution process. This activity may communicate with the other center activities (and agencies external to the centers) to ensure ROD resolution. The quality assurance directorate at a supply center - this is the action point - acts as the primary investigative force in resolving a quality problem for the more difficult discrepancies. The DLA SPD Standard 4636 provides a base in describing the functions of an action point. However, due to the anticipated variability in the numbers of transactions passed among supply center activities, and due to the variability of personnel grades among the different centers, each center's action point was individually considered.

8. The center's support point supply activity - called the "supply operations" directorate - responds to a ROD when one is passed to it for resolution in whole or in part. From a broader perspective, the supply operations, as a pool of inventory managers, are aware of the status and quantity of each item for which the center maintains responsibility. This fact becomes important when assets that are (or believed to be) discrepant are placed in a nonissuable or "frozen" mode. The sources of functional information for the center supply operations directorate are DLA SPD Standards 2201 and 2205.

9. The support point Contracting and Production (C&P) Directorate responds to a ROD by interfacing directly with the contractor who provided the nonconforming material. Coordination, to include renegotiation, takes place with the contractor. The problem is analyzed from a procurement standpoint to determine the most cost-effective solution via modification of the contract or other administrative means. The standard that covers the tasks of the C&P Directorate is DLA SPD Standard 1520.

10. When reimbursement to the government is part of the final resolution of a ROD, the comptroller personnel effect the awarding of proper credit. The standard covering comptroller activities is DLA SPD Standard 7752.

11. The Defense Contract Management Command (DCMC) Quality Assurance Representative (QAR), performs many functions upon receipt of a ROD from the action point of a center. The representative becomes involved primarily in cases in which the vendor who supplied the discrepant material did so under a contract administered at the Defense Contract Management Command (DCMC) level. The QAR will review contract records; gather exhibits; inspect on-hand stocks (similar to those for which a ROD was initiated) if appropriate; prepare material deficiency investigative report; and complete other activities in conjunction with a thorough investigation. Additionally, the QAR will interface with the contractor, provide instructions to the supply center action point, disseminate information to certain recipients of the item (if possible), and generate the final solution to the discrepancy. In Project 81012, a detailed analysis at the QAR level, taking into account various supply classes, was performed for this report. This analysis will be addressed below.

12. Before a QAR acts on a ROD that surfaces to the DCMC level, it is processed by a monitor. This monitor is the key player in having and maintaining up-to-date information on the resolution progress of a ROD (termed material deficiency report (MDR) at the DCMC level). In response to a ROD, this monitor also performs many other administrative functions and coordinates information flow within DCMC activities. Monitoring activities occur at both the district and divisional levels of DCMC.

13. The Contracting Administration Office (CAO) may be an element of a Defense Contract Management Area Office (DCMAO) or a Defense Plant Representative Office (DPRO). In either case, the Administrative Contracting Officer (ACO) within the CAO performs actions necessary to verify whether or not supplies conform to contractual specifications. If a discrepancy problem ascends to the ACO's level, detailed data on the specific problem is collected; a decision is made regarding the acceptability of products; actions needed to correct defects are identified ; and recommendations are provided to the QAR and the contractor to resolve the problems in the most cost-effective and timely fashion.

D. Costs and Associated Probabilities - Customer Unit, Supporting Supply Activity, and Service Maintenance Facility

1. Costs in this and the following sections are task generated. For each individual task (defined either through survey results or SPD Standards) the time, relative frequency of occurrence and rank or grade of the person performing the task was determined. Based on the grade or rank of the person performing the task, and based on the number of hours expended, a task cost was calculated. The sum total of all task costs attributed to an activity represents the cost of that activity's involvement in the ROD process. This procedure applies to both packaging and shipping RODS.

2. In the time computations for tasks normally performed by civilian personnel, the base time to perform a task was increased by an appropriate fatigue and delay factor. Civilian activity costs were inflated by leave and fringe benefit allowance factors. Military activity costs were similarly enhanced with appropriate leave, retirement, and other personnel costs. A full description of the application of all time and cost adjustment factors is given in Appendix H.

3. The costs associated with customer units, supporting supply activities, and service maintenance facilities involve two "phases" or two groups of transactions. The first phase involves the discovery of the discrepant material and the construction and submission of the ROD. The second phase involves responding to directives regarding the disposition of the material in conjunction with the resolution of the ROD. The directives may arise from the QAR or the supply center. They are then provided to the customer, retail supply point or service maintenance facility. It will be assumed that if an activity initiates a ROD, that activity will eventually be instructed to take appropriate actions for the discrepant material.

4. In all cases where information was derived from survey results, the median cost - not the average or mean cost - was utilized. Using the median of all individual survey results eliminates the risk of a few extremely high or low cost results affecting the entire sample.

5. The probability of occurrence of a packaging ROD or a shipping ROD - taking into account the material flow to each supply activity - has been addressed in Appendices D through G. However, the cost and probability for each different type of shipping ROD is now addressed. Thus, given that a shipping ROD has occurred, a probability distribution is derived to account for the relative occurrence of each specific type of shipping RODS. This procedure is taken since different kinds of shipping RODs accumulate different costs.

6. Computational details for packaging RODs are given in Appendix H. A detailed analysis for shipping RODs is performed in Appendix I. In the case of shipping RODS, a weighted average of costs for each type of shipping ROD was calculated using the respective relative frequency of occurrence. Table 7 provides the final cost results for the two categories of RODs and the three non-DLA supply levels. Costs represent both ROD initiation actions and disposition response functions.

Table 7

EXPECTED COSTS FOR NON-DLA ACTIVITIES

Supply Level	Packaging RODs	Shipping RODs
Customer (Ultimate User)	$ 104.70	$ 107.90
Retail Supply Point	$ 62.97	$ 67.80
Service Maint. Facility	$ 181.06	$ 201.74

As an illustration, if a retail supply point detects a packaging problem and submits a ROD, the cost accumulated by this supply point is $62.97. If a service maintenance facility detects a shipping problem and reports it, averaging over all different types of shipping RODS, the total expected cost to the service maintenance facility is $201.74.

E. Calculation of Non-DLA Activities Expected Cost

1. At this stage, expected costs for all non-DLA activities can be generated for each center. Using the probabilities obtained in Tables 5 and 6, and the activity costs generated in this section, expected costs are readily obtained. Table 8 provides cost generations for each center for packaging RODS. Table 9 performs the same function for shipping RODS.

Table 8

EXPECTED COST PACKAGING ROD CALCULATION
FOR NON-DLA ACTIVITIES

Center	Customer	Retail Supply Pts	Service Maint. Facilities		
DCSC	0.017314*($104.70)	+ 0.012939*($62.97)	+ 0.111078*($181.06)	=	$ 22.74
DESC	0.011811*($104.70)	+ 0.008806*($62.97)	+ 0.064924*($181.06)	=	$ 13.55
DGSC	0.014674*($104.70)	+ 0.010963*($62.97)	+ 0.085090*($181.06)	=	$ 17.63
DISC	0.012163*($104.70)	+ 0.009018*($62.97)	+ 0.102971*($181.06)	=	$ 20.49
DPSC (C&T)	0.012550*($104.70)	+ 0.009305*($62.97)	+ 0.116200*($181.06)	=	$ 22.94
DPSC (Med)	0.029691*($104.70)	+ 0.022056*($2.97)	+ 0.035121*($181.06)	=	$ 10.86

Table 9

EXPECTED COST SHIPPING ROD CALCULATIONS
FOR NON-DLA ACTIVITIES

Center	Customer		Retail Supply Pts		Service Maint. Facilities		
DCSC	0.385359*($107.90)	+	0.264577*($67.80)	+	0.195715*($201.74)	=	$ 99.00
DESC	0.364451*($107.90)	+	0.250234*($67.80)	+	0.158285*($201.74)	=	$ 88.22
DGSC	0.379292*($107.90)	+	0.260427*($67.80)	+	0.174510*($201.74)	=	$ 93.79
DISC	0.339705*($107.90)	+	0.233258*($67.80)	+	0.228667*($201.74)	=	$ 98.60
DPSC (C&T)	0.335545*($107.90)	+	0.230394*($67.80)	+	0.247091*($201.74)	=	$101.67
DPSC (Med)	0.492822*($107.90)	+	0.338403*($67.80)	+	0.046344*($201.74)	=	$ 85.47

F. Costs and Associated Probabilities - DLA Depot

1. To calculate the costs accumulated with the receipt of a discrepant item at a DLA depot and the subsequent initiation of a packaging or shipping ROD, two sources of information were utilized. The first element of data is that set of standards covering the receipt of material at a depot - SPD Standard 3271 for bin receipts and SPD Standard 3272 for bulk receipts. The second source of information evolved from a visit to the Defense Depot at Richmond. The process of inspection and quality complaint initiation was studied on-site. Bulk and bin shipments were looked at separately. Appendix J develops the average cost incurred when a packaging problem occurs at the receiving division and a ROD is initiated. Appendix K provides a similar analysis for shipping RODS.

2. The analysis, in both cases, differentiates between bulk and bin shipments to conform to the SPD Standards. Additionally, a weighted average procedure for shipping RODs - taking into account the different types of RODs under this general category - was performed to provide a single expected cost for a generic shipping ROD. The average cost to a DLA depot for packaging ROD processing - including both initiation and response to disposition instructions - is $47.35. The expected DLA depot cost of a shipping ROD is calculated as $21.61.

3. The expected cost of DLA depot involvement for packaging ROD processing with respect to other complaint initiators involvement is now calculated. The DLA cost was determined above. The probabilities are extracted from Table 5. The expected cost is simply the product of the cost experienced and the probability of involvement.

Table 10

CALCULATION OF DLA DEPOT EXPECTED COST
FOR PACKAGING RODS

Center	Probability of DLA Depot Involvement	DLA Depot Cost	Expected Cost
DCSC	0.858664	$ 47.35	$ 40.66
DESC	0.914459	$ 47.35	$ 43.30
DGSC	0.889273	$ 47.35	$ 42.11
DISC	0.875848	$ 47.35	$ 41.47
DPSC (C&T)	0.861945	$ 47.35	$ 40.81
DPSC (Med)	0.913132	$ 47.35	$ 43.24

4. The same procedure is used for shipping RODs to obtain expected DLA depot involvement costs. Probabilities are taken from Table 6.

Table 11

CALCULATION OF DLA DEPOT EXPECTED COST
FOR SHIPPING RODS

Center	Probability of DLA Depot Involvement	DLA Depot Cost	Expected Cost
DCSC	0.154349	$ 21.61	$ 3.34
DESC	0.227030	$ 21.61	$ 4.91
DGSC	0.185771	$ 21.61	$ 4.01
DISC	0.198370	$ 21.61	$ 4.29
DPSC (C&T)	0.186970	$ 21.61	$ 4.04
DPSC (Med)	0.122431	$ 21.61	$ 2.65

G. Costs and Associated Probabilities - Center Quality Activities

1. The next set of computations will address all center activities - costs dealing with quality activities, costs dealing with support activities, and a cost analysis to construct a "picture" of ROD resolution involving all activities within a center. These actions are accomplished for packaging RODs (Appendices L, M and N) and shipping RODs (Appendices O, P, and Q).

2. The two supply center quality activities are the focal point and the action point. DLA SPD Standard 4634 covers the focal point functions and DLA SPD Standard 4636 addresses the functions of the action point (the quality assurance division at a center). These standards formed the complete basis for all computations within the center quality activities. The detailed analyses are contained in Appendix L for packaging RODs and Appendix O for shipping RODs.

3. The cost of ROD processing is given in Table 12 for both categories of RODS, both center quality activities, and all centers. In a fashion similar to the other analyses up to this point for shipping RODS, a weighted average procedure was used in Appendix O to account for the different types of shipping RODS.

Table 12

ROD PROCESSING COSTS

	Packaging ROD		Shipping ROD	
Center	Focal Point	Action Point	Focal Point	Action Point
DCSC	$ 3.93	$ 76.34	$ 3.37	$ 67.90
DESC	$ 3.18	$ 76.28	$ 2.69	$ 67.33
DGSC	$ 2.81	$ 75.41	$ 2.35	$ 65.92
DISC	$ 2.86	$ 77.04	$ 2.35	$ 66.66
DPSC (C&T)	$ 4.87	$ 92.35	$ 4.03	$ 80.21
DPSC (Med)	$ 2.86	$ 92.35	$ 2.39	$ 80.93

H. Costs and Associated Probabilities - Center Support Activities

1. The three major supply center support activities are the Contracting and Production (C&P) Directorate, the Supply Operations Directorate (or Support Point Supply Office) and the Comptroller Office.

2. Cost computations for packaging RODs are conducted in Appendix M. The results of computations - the cost entailed by a center support activity if it becomes involved with the resolution of a packaging ROD - are given in Table 13.

Table 13

COSTS OF CENTER SUPPORT ACTIVITIES PACKAGING RODS

Center	Contracting & Production	Supply Operations	Comptroller
DCSC	$ 16.13	$ 10.18	$ 3.13
DESC	$ 16.11	$ 11.31	$ 3.12
DGSC	$ 15.94	$ 9.03	$ 3.10
DISC	$ 19.70	$ 11.43	$ 3.12
DPSC (C&T)	$ 23.60	$ 16.91	$ 3.12
DPSC (Med)	$ 19.70	$ 9.21	$ 3.12

3. Similar cost computations were conducted for shipping RODs in Appendix P. The results are given in Table 14.

Table 14

COSTS OF CENTER SUPPORT ACTIVITIES SHIPPING RODS

Center	Contracting & Production	Supply Operations	Comptroller
DCSC	$ 14.95	$ 4.77	$ 3.13
DESC	$ 14.84	$ 5.30	$ 3.12
DGSC	$ 14.59	$ 4.22	$ 3.10
DISC	$ 17.92	$ 5.35	$ 3.12
DPSC (C&T)	$ 21.54	$ 7.90	$ 3.12
DPSC (Med)	$ 18.07	$ 4.31	$ 3.12

I. Measuring Supply Center Involvement

1. Using the individual costs developed for quality activities and support activities at each center, an analysis is now conducted to derive an expected cost for all center activities at each of the six centers. This is accomplished by tracing the set of activities that played a part in each ROD resolution. A center's accumulated cost for a ROD becomes the sum of the costs for all activities that participated in the resolution.

2. The CDCS was utilized to derive a probability distribution for all possible resolution scenarios. The focal point will always become involved as the initial processor of ROD information. However, the actual "resolvers" - the action point, comptroller, supply operations directorate and contractor directorate - become involved when and if needed. Some RODs may require only one activity to become involved; others may be jointly worked by all four offices. The expected cost for a particular scenario is computed (the product of scenario relative occurrence and the scenario cost). The expected cost of a center's involvement is then calculated by summing the individual expected costs.

3. The calculations for packaging RODs are given in Appendix N; the calculations for shipping RODs are presented in Appendix Q. Results are given in Table 15 for both ROD categories.

Table 15

EXPECTED CENTER COST

Center	Packaging ROD	Shipping ROD
DCSC	$ 45.95	$ 53.41
DESC	$ 37.57	$ 53.63
DGSC	$ 90.67	$ 28.27
DISC	$ 29.38	$ 27.42
DPSC (C&T)	$ 97.20	$ 84.24
DPSC (Med)	$ 31.61	$ 26.04

J. Compiling Costs for DLA Activities

This section takes the cost figures for DLA depots and DLA supply centers to arrive at the total cost of DLA involvement in the processing of both shipping and packaging RODS. The tables below serve as computational devices to calculate DLA costs accumulated for each type of ROD.

Table 16

CALCULATION OF DLA ACTIVITIES COST
FOR PACKAGING RODS

Center	Expected DLA Depot Cost (from Table 10)	Expected DLA Supply Ctr Cost (from Table 15)	Total DLA Cost
DCSC	$ 40.66	$ 45.95	$ 86.61
DESC	$ 43.30	$ 37.57	$ 80.87
DGSC	$ 42.11	$ 90.67	$ 132.78
DISC	$ 41.47	$ 29.38	$ 70.85
DPSC (C&T)	$ 40.81	$ 97.20	$ 138.01
DPSC (Med)	$ 43.24	$ 31.61	$ 74.85

Table 17

CALCULATION OF DLA ACTIVITIES COST
FOR SHIPPING ROD

Center	Expected DLA Depot Cost (from Table 11)	Expected DLA Supply Ctr Cost (from Table 15)	Total DLA Cost
DCSC	$ 3.34	$ 53.41	$ 56.75
DESC	$ 4.91	$ 53.63	$ 58.54
DGSC	$ 4.01	$ 28.27	$ 32.28
DISC	$ 4.29	$ 27.42	$ 31.71
DPSC (C&T)	$ 4.04	$ 84.24	$ 88.28
DPSC (Med)	$ 2.65	$ 26.04	$ 28.69

K. Reporting Total Costs for Non-DLA and DLA Activities

This section summarizes the costs - for both types of ROD categories and for all six centers - developed thus far for non-DLA participants (ultimate user, retail supply points and service maintenance facilities) and DLA participants (DLA depots and supply centers). Table 18 summarizes packaging ROD costs; Table 19 presents all shipping ROD compiled costs.

Table 18

PACKAGING ROD ACCUMULATED COSTS

Center	Non-DLA Activities (from Table 8)	DLA Activities (from Table 16)
DCSC	$ 22.74	$ 86.61
DESC	$ 13.55	$ 80.87
DGSC	$ 17.63	$ 132.78
DISC	$ 20.49	$ 70.85
DPSC (C&T)	$ 22.94	$ 138.01
DPSC (Med)	$ 10.86	$ 74.85

Table 19

SHIPPING ROD ACCUMULATED COSTS

Center	Non-DLA Activities (from Table 9)	DLA Activities (from Table 17)
DCSC	$ 99.00	$ 56.75
DESC	$ 88.22	$ 58.54
DGSC	$ 93.79	$ 32.28
DISC	$ 98.60	$ 31.71
DPSC (C&T)	$ 101.67	$ 88.28
DPSC (Med)	$ 85.47	$ 28.69

L. Costs for DCMC Elements

1. In Project DLA-94-P40158, an extensive analysis was performed to determine costs accumulated by various activities within a DCMC in the resolution of a quality complaint. The costs of three activities were explicitly calculated or estimated. These elements are the discrepancy monitor, the Quality Assurance Representative (QAR) and the Administrative Contracting Officer (ACO).

2. Using the results generated in Project DLA-94-P40158 for the QAR, a dollar value for each DLA-managed item - identified by Federal Supply Class (FSC) - is given. These costs are reported in Appendix R for Packaging RODs and Appendix S for Shipping RODS. A measure of QAR involvement (specifically, investigation) is derived from the Product Quality Deficiency Report (PQDR). The resulting probability combined with the accumulated cost for both the QAR and ACO provides expected cost of DCMC investigative efforts. Adding the monitor cost to the expected investigative cost results in the actual cost of DCMC involvement. Multiplying this last cost by the probability that a ROD is passed from a supply center to DCMC-derived from telephone interviews - produces the expected cost of involvement for all DCMC elements.

3. A complete step-by-step development of expected costs is given for packaging RODs (Appendix R) and Shipping RODs (Appendix S). The tables produced display the expected DCMC cost of involvement by each FSC.

4. An expected cost analysis was also generated for the supply center level. Results are given below.

Table 20

EXPECTED DCMC COST OF INVOLVEMENT

Center	Packaging ROD	Shipping ROD
DCSC	$ 11.40	$ 7.26
DESC	$ 10.97	$ 7.05
DGSC	$ 4.11	$ 2.76
DISC	$ 5.30	$ 3.67
DPSC (C&T)	$ 5.46	$ 7.16
DPSC (Med)	$ 12.19	$ 3.03

M. Computation of Final Cost Results

1. The total expected administrative costs have now been developed for all three categories of "participants" in the ROD resolution process: DLA activities, non-DLA activities, and DCMC activities. Final cost tables are now generated. These tables are contained in Appendices T and U for packaging RODs and shipping RODs respectively.

2. The packaging ROD costs for both non-DLA and DLA activities (reported in Table 18) and the shipping ROD costs for both non-DLA and DLA activities (reported in Table 19) are carried forward to the final "Tables of Administrative Costs". The expected DCMC cost figures (developed in Appendices R and S) are also reported. The total administrative cost - by ROD category, and by center, is provided in tables 1 and 2. The total administrative cost by FSC is shown in Appendices T and U.

APPENDIX A

Customer (Requisitioner) Survey

The data collected from surveys sent to customer activities in Project DLA-89-P81012 and DLA-90-P90136 was utilized again for this present project. Both surveys are contained in this Appendix.

Each question in the survey is displayed with letters representing the different types of RODs that would apply to the task or function represented. The labels utilized are those reflected as Discrepancy Codes within the CDCS documentation and are outlined in the table below.

Table A-1

DISCREPANCY CODE

(Utilized in Survey Questions)

Code	Type of ROD
P	Packaging
C	Poor Condition or Damage
D	Documentation
M	Misdirected Item
W	Wrong Item
O	Overage in Shipment
S	Shortage in Shipment

CUSTOMER (REQUISITIONER)

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Travel to source of supplies (if appropriate). Enter average travel time. (ROD Types C, D, M, O, S, W, P)	_____	_____
Receive item(s) from supply point. Take possession and acknowledge receipt. Enter average time for each receipt action. (ROD Types C, D, M, O, S, W, P)	_____	_____
Return to home station (unit, base, etc.), if appropriate. Enter average time. (ROD Types C, D, M, O, S, W, P)	_____	_____
Inspect shipment to determine if item has discrepancy that would be reflected on a Report of Discrepancy (ROD). Enter average time for each shipment. (ROD Types C, D, M, O, S, W, P)	_____	_____
Identify in detail the discrepancy. Enter average time for each receipt. (ROD Types C, D, M, O, S, W, P)	_____	_____
Complete and conduct necessary research for all entries on form. (The most common form used is the SF 364.) Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____

CUSTOMER (REQUISITIONER)

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Determine discrepancy classification. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)		
Gather supporting documentation (DD Form 250, DD 1348, original requisition, etc.). Enter total time dedicated to each ROD. (ROD Types C, D, 0, S, W, P)		
Initiate message to action or control point. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)		
Order replacement item. Enter average time to order. (ROD Type C)		
Repack item for turn-in of item (if appropriate). Enter average time for each shipment. (ROD Types C, M, W)		
Travel to supply point for turn-in of item (if appropriate). Enter average travel time. (ROD Types C, M, W)		
Send item via disposition instructions if addressee is other than local supply point. Enter average time to send item. (ROD Types C, M, W)		
Receive turn-in document from supply source. Enter average time for each turn-in. (ROD Types C, M, W)		

CUSTOMER (REQUISITIONER)

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Return to home station (if appropriate). Enter average travel time. (ROD Types C, M, W)	_____	_____
Adjust property book and other organizational documents as necessary. Enter total administrative time.	_____	_____
File your copy in local area in accordance with service regulations. Enter total administrative time. (ROD Types C, D, M, O, S, W, P)	_____	_____

QUESTIONNAIRE

1. Which classification below best describes your supply mission or function?

_____ Wholesale Supply Activity (For example, service maintenance facility with a supply mission).

_____ Retail Supply Activity (In direct support of customer activities).

_____ Customer Activity (User or consumer of material).

2. Approximately how many different shipments (identified by separate receipt documents) has your activity received in the past 12 months?

_____ Receipts/Shipments

3. How many shipments were determined to require the submission of Reports of Discrepancy (RODs)? (Do not include shipments for which you may have submitted a quality complaint for a nonconforming item.)

_____ Receipts/Shipments

4. Of these RODs that you submitted, provide, as best as possible, the quantity for each different ROD type specified below.

_____ RODs submitted for "Condition of Materiel" problems such as expired shelf-life, damaged parcel post or freight shipment, pilferage, theft or vandalism.

_____ RODs submitted for "Supply Documentation" problems such as incomplete, illegible, mutilated, improper or missing supply paperwork.

_____ RODs submitted for "Misdirected Item" problems.

_____ RODs submitted for "Wrong Item Receipt" problems.

_____ RODs submitted for "Shortages."

_____ RODs submitted for "Overages."

_____ RODs submitted for "Packing Discrepancies" such as improper packaging, preservation, marking, or unitization.

Attached is a breakdown of all types of RODs that will be addressed in this study (these are highlighted by boxes). This table is an extract from the Customer Depot Complaint System (CDCS) User's Manual and may assist you in providing quantities for question #4 above.

APPENDIX B

Supply Point Survey

The data collected from surveys sent to supporting supply activities (retail supply points) in Project 81012 and DLA-90-P90136 was utilized again for this present project. Both surveys are contained in this Appendix.

Each question in the survey is displayed with letters representing the different types of RODs that would apply to the task or function represented. The labels utilized are those reflected as Discrepancy Codes within the CDCS documentation and are outlined in the table below.

Table B-1

DISCREPANCY CODE

(Utilized in Survey Questions)

Code	Type of ROD
P	Packaging
C	Poor Condition or Damage
D	Documentation
M	Misdirected Item
W	Wrong Item
O	Overage in Shipment
S	Shortage in Shipment

SUPPLY POINT

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Receive item(s) from issuing facility. Take possession and acknowledge receipt. Enter average time for each receipt action. (ROD Types C, D, M, O, S, W, P)	_____	_____
Disassemble pack (if appropriate). Enter average time for each shipment. (ROD Types C, D, M, O, S, W, P)	_____	_____
Inspect shipment to determine if item has a discrepancy that could be reflected on a Report of Discrepancy (ROD). Enter average time for each shipment. (ROD Types C, D, M, O, S, W, P)	_____	_____
Identify in detail the discrepancy. Enter average time for each receipt. (ROD Types C, D, M, O, S, W, P)	_____	_____
Complete a ROD and conduct necessary research for all entries on form. (The most common form used is the SF 364.) Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Determine discrepancy classification. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Gather supporting documentation (DD Form 250, DD 1348, original requisition, etc.). Enter total time dedicated to each ROD. (ROD Types C, D, O, S, P)	_____	_____

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Initiate message to action or control point. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)		
If materiel was designated for a specific customer, inform this customer. Enter average time for coordination. (ROD Types C, S, P)		
Reorder replacement items. Enter average time to order. (ROD Type C)		
Repack item for shipment. Enter average time for each shipment. (ROD Types C, M, W)		
Send item via disposition instructions. Enter average time to send item. (ROD Types C, M, W)		
Receive turn-in document from addressee on disposition instructions. Enter average time for each turn-in. (ROD Types C, M, W)		
Close out all supply records to reflect all receipt/turn-in transactions. Enter total administrative time. (ROD Types C, D, M, O, S, W, P)		
File your copy of ROD in local area in accordance with service regulations. Enter total administrative time. (ROD Types C, D, M, O, S, W, P)		

QUESTIONNAIRE

1. Which classification below best describes your supply mission or function?

_____ Wholesale Supply Activity (For example, service maintenance facility with a supply mission).

_____ Retail Supply Activity (In direct support of customer activities).
Customer Activity (User or consumer of material).

2. Approximately how many different shipments (identified by separate receipt documents) has your activity received in the past 12 months?

_____ Receipts/Shipments

3. How many shipments were determined to require the submission of Reports of Discrepancy (RODs)? (Do not include shipments for which you may have submitted a quality complaint for a nonconforming item.)

_____ Receipts/Shipments

4. Of these RODs that you submitted, provide, as best as possible, the quantity for each different ROD type specified below.

_____ RODs submitted for "Condition of Materiel" problems such as expired shelf-life, damaged parcel post or freight shipment, pilferage, theft or vandalism.

_____ RODs submitted for "Supply Documentation" problems such as incomplete, illegible, mutilated, improper or missing supply paperwork.

_____ RODs submitted for "Misdirected Item" problems.

_____ RODs submitted for "Wrong Item Receipt" problems.

_____ RODs submitted for "Shortages."

_____ RODs submitted for "Overages."

_____ RODs submitted for "Packing Discrepancies" such as improper packaging, preservation, marking, or unitization.

Attached is a breakdown of all types of RODs that will be addressed in this study (these are highlighted by boxes). This table is an extract from the Customer Depot Complaint System (CDCS) User's Manual and may assist you in providing quantities for question #4 above.

APPENDIX C

Service Maintenance Facility Survey

The data collected from surveys sent to service maintenance facilities in Project 81012 and DLA-90-P90136 was utilized again for this present project. Both the surveys are contained in this Appendix.

Each question in the survey is displayed with letters representing the different types of RODs that would apply to the task or function represented. The labels utilized are those reflected as Discrepancy Codes within the CDCS documentation and are outlined in the table below.

Table C-1

DISCREPANCY CODE

(Utilized in Survey Questions)

Code	Type of ROD
P	Packaging
C	Poor Condition or Damage
D	Documentation
M	Misdirected Item
W	Wrong Item
O	Overage in Shipment
S	Shortage in Shipment

SERVICE MAINTENANCE FACILITY

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Receive item(s) from contractor or higher source of supply. Take possession and acknowledge receipt. Enter average time for each receipt action. (ROD Types C, D, M, O, S, W, P)	_____	_____
Disassemble pack (if appropriate). Enter average time for each shipment. (ROD Types C, D, M, O, S, W, P)	_____	_____
Inspect shipment to determine if item has a discrepancy that could be reflected on a Report of Discrepancy (ROD). Enter average time for each shipment. (ROD Types C, D, M, O, S, W, P)	_____	_____
Identify in detail the discrepancy. Enter average time for each receipt. (ROD Types C, D, M, O, S, W, P)	_____	_____
Complete a ROD and conduct necessary research for all entries on form. (The most common form used is the SF 364.) Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Determine discrepancy classification. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Gather supporting documentation (DD Form 250, DD 1348, original requisition, etc.). Enter total time dedicated to each ROD. (ROD Types C, D, O, S, P)	_____	_____

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Submit message of SF 364 to action or control point. Enter average time for each ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Prepare and forward a Letter of Rejection (LOR) to reject deficient depot procurements. Enter average preparation time. (ROD Types C, P)	_____	_____
Provide information and copies of all documentation to shippers, Administrative Contracting Officer (ACO), and other area-oriented depots (if appropriate). Enter average time for preparation and submission. (Rod Types C, P)	_____	_____
Provide support and additional information to Director of Contracting in corrective action efforts. Enter total time of support for a ROD. (ROD Types C, D, M, O, S, W, P)	_____	_____
Perform all administrative actions - including maintaining a written log - to control all outgoing and incoming correspondence. Enter total administrative time required. (ROD Types C, D, M, O, S, W, P)	_____	_____
If materiel was designated for a specific customer. Enter average time for coordination. (ROD Types C, S, P)	_____	_____
Reorder replacement items. Enter average time to order. (ROD Type C)	_____	_____

Task	Time to Perform (in minutes)	Rank/Grade (of person performing task)
Repack item for shipment. Enter average time for each shipment. (ROD Types C, M, W)	_____	_____
Maintain case file on materiel with documentation, technical data, and contract information. Enter total time required for files maintenance. (ROD Types C, D, M, O, S, W, P)	_____	_____
Receive and distribute disposition instructions. Enter total time to disseminate disposition information. (ROD Types C, M, W)	_____	_____
Send item via disposition instructions. Enter average time to send item. (ROD Types C, M, W)	_____	_____
Receive turn-in document from addressee on disposition instructions. Enter average time for each turn-in. (ROD Types C, M, W)	_____	_____
Close out all supply records to reflect all receipt/turn-in transactions. Enter total administrative time. (ROD Types C, D, M, O, S, W, P)	_____	_____
File your copy of ROD in local area in accordance with service regulations. Enter total administrative time. (ROD Types C, D, M, O, S, W, P)	_____	_____

QUESTIONNAIRE

1. Which classification below best describes your supply mission or function?

_____ Wholesale Supply Activity (For example, service maintenance facility with a supply mission).

_____ Retail Supply Activity (In direct support of customer activities).

_____ Customer Activity (User or consumer of material).

2. Approximately how many different shipments (identified by separate receipt documents) has your activity received in the past 12 months?

_____ Receipts/Shipments

3. How many shipments were determined to require the submission of Reports of Discrepancy (RODs)? (Do not include shipments for which you may have submitted a quality complaint for a nonconforming item.)

_____ Receipts/Shipments

4. Of these RODs that you submitted, provide, as best as possible, the quantity for each different ROD type specified below.

_____ RODs submitted for "Condition of Materiel" problems such as expired shelf-life, damaged parcel post or freight shipment, pilferage, theft or vandalism.

_____ RODs submitted for "Supply Documentation" problems such as incomplete, illegible, mutilated, improper or missing supply paperwork.

_____ RODs submitted for "Misdirected Item" problems.

_____ RODs submitted for "Wrong Item Receipt" problems.

_____ RODs submitted for "Shortages."

_____ RODs submitted for "Overages."

_____ RODs submitted for "Packing Discrepancies" such as improper packaging, preservation, marking, or unitization.

Attached is a breakdown of all types of RODs that will be addressed in this study (these are highlighted by boxes). This table is an extract from the Customer Depot Complaint System (CDCS) User's Manual and may assist you in providing quantities for question #4 above.

APPENDIX D

Development of Material Distribution Probabilities for Packaging RODs

Figure 2 in the main text was reconfigured as a probability tree diagram (Figure D-1). Each supply activity is represented as an event on the tree. Each branch represents the probability of material flow to and from a given activity; these probabilities are derived in this appendix. The nodes, or branch terminal points, are labeled "D", "S", "A", and "U". These letters represent costs in the following fashion:

- "D" represents the total administrative cost of a packaging ROD process that begins at a DLA depot. The reporting process beginning at a DLA depot assumes that a discrepant item was discovered by this depot. Also, if a packaging problem is discovered at a specific DLA depot, that depot will initiate a ROD. This one-for-one relationship applies to the other supply levels; a discrepant item will cause the submission of a ROD.

- "S" represents the total administrative cost of the packaging ROD process that begins at a service maintenance facility.

- "A" represents the total administrative cost of the packaging ROD process that begins at a supporting supply activity.

- "U" is the total administrative cost of the packaging ROD process that begins at a using organization (requisitioner that will utilize the item).

Probabilities of deliveries from contractors to each of the three types of supply activities were developed from a compilation of active contract files (ACF) for all DLA supply centers. The individual records were all active during the month of March 1994; this set of records represents all shipments from all contractors to all locations (identified by Routing Identifier Code (RIC)) for this period of time. It is assumed that proportions of shipments to each of the different types of supply activities will not change appreciably from one month to another and that March 1994 represents a typical month. On Figure D-1, "PD", "PS" and "PA" represent the probabilities that a shipment is made from a contractor to, respectively, a DLA depot, a service maintenance facility and a supporting supply activity.

All six (6) DLA depots were considered in the analysis. All Army supply depots, major Navy supply centers with a storage mission, and Air Force activities with a depot mission were classified as "service maintenance facilities." Any other RIC was treated as a supporting supply activity (or retail supply point). Enclosure 1 to Appendix D provides a listing of all DLA depots and the major service maintenance facilities. Enclosure 2 to Appendix D provides a breakdown of contractor shipments from DLA acquisitions on active contracts as of March 1994.

Converting the proportions in Enclosure 2 to branch probabilities, the probability that a shipment of an item managed by DGSC, originating from a contractor and going directly to a DLA depot, is .655877. Similarly, the probability that a service maintenance facility receives a DESC item directly from a contractor is .054183. The probability that a DISC shipment bypasses both types of depots and is received by another supply activity is .097353.

The first probability considered reflects the proportion of discrepant items detected at a DLA depot which would cause the submission of a packaging ROD. The approach taken was full utilization of information contained in various databases. The total number of receipts into a DLA depot was gathered from the ACF, which is continuously updated. Specifically, the number of contract line item numbers (CLINS) was utilized to represent the number of shipments arriving at a depot.

The RIC on each ACF record provided the specific DLA depot to which a shipment was made. The number of packaging RODs initiated by each depot was determined from the CDCS database. All CDCS records which had a discrepancy code beginning with "P" (packaging ROD), and identified by a depot RIC for each originator of a ROD, were extracted. The probability of packaging ROD occurrence is the ratio of the number of packaging RODs to the number of shipments - for each depot (RIC). For this portion of the analysis, updated ACF data was utilized. Figures and results are given in the table below.

Table D-1

DLA DEPOT PACKAGING ROD PROBABILITY CALCULATIONS

Depot	No. of DLA Depot Shipments	Number of Packaging RODs	Prob. of Packaging RODs
DDCO (Columbus, OH)	33306	176	.00528
DDMP (Mechanicsburg, PA)	58133	548	.00943
DDMT (Memphis, TN)	45133	388	.00859
DDOU (Ogden, UT)	46783	5364	.11466
DDRV (Richmond, VA)	68767	5897	.08575
DDTC (Tracy, CA)	56767	230	.00405

The average packaging ROD probability - across all depots - will be utilized in further calculations. The probability of a DLA depot-initiated packaging ROD is therefore .03796.

The next set of probabilities are those indicating the number of shipments from a DLA depot to service maintenance facilities and supporting supply activities. The data utilized for calculation of these probabilities was derived from the Materiel Release Order (MRO) historical files. One year of data, third quarter FY 93 through second quarter FY 94, was used for the calculations.

All MROs reflecting transfer of assets between DLA depots are deleted from consideration in this study. Enclosure 3 to Appendix D provides the MRO data and calculation of shipment proportions which are converted to branch probabilities for Figure D-1.

The results specified in Enclosure 3 demonstrate that the probability that a DLA depot ships an item to a service maintenance facility is .01346. This probability is conditional given that the item is believed to be "error-free." The probability a shipment is made to a service maintenance facility is actually:

P (Item is error-free) (no packaging problems)
x P (Shipment to service maintenance facility given that item is error-free)

= (1 - .03796) (.01346)

= .01295

Similarly, the probability that a shipment from a DLA depot is destined for a supporting supply activity or retail supply point is:

P (Item is error-free at DLA depot)
x P (Shipment to a retail supply point given that item is error-free)

= (1 - .03796) (.98653)

= .94908

Survey results from Project DLA-89-P81012 and DLA-90-P90136 were again utilized to assess two probabilities from each supply level (each potential complaint initiator). These probabilities represent both the proportion of time discrepant items are detected at a supply level and the proportion of time "ROD-free" material is shipped from the one supply level to either another level or to the ultimate customer. The probability of detecting a discrepant item that would precipitate the submission of a packaging ROD was assessed through the survey results at Appendices A, B and C for customer activities, supporting supply activities (retail supply points), and service maintenance facilities respectively.

For all surveys, the number of discrepant shipments was divided by the total number of shipments to determine the probability of a packaging ROD submission. This was done for all survey respondees. The median of all probabilities became the best estimate of the probability of occurrence of a packaging ROD at a given supply level. This probability subtracted from one became the estimate for a nondiscrepant shipment from this supply level.

Due to the variability of results (attesting primarily to differences in policies and procedures among the individual services), the median - not the average or mean - of all observations was utilized. The use of this statistic eliminates the influence of any extremely high or low numerical responses which would have a strong effect on probability estimates.

The survey sent to service maintenance facilities is contained in Appendix C. The list of all service maintenance facilities is at Enclosure 1 to Appendix D. Data provided in the survey was assembled primarily by receiving division personnel at the sampled depots. The median probability of a nondiscrepant item (with respect to packaging discrepancies) leaving the service maintenance facility and arriving at a supporting supply activity is .99195. Similarly, the probability of initiation of a packaging ROD preventing subsequent shipment to a retail supply activity (at least temporarily) - is .00806.

The next set of probabilities describing materiel at a supporting supply activity resulted from surveys sent to selected recipients of materiel. This survey is at Appendix B. This set of requisitioners constituted a sample of ROD initiators who have a retail receipt, storage and issue mission. These initiators were selected from available records in the Customer Depot Complaint System (CDCS). The survey results demonstrated that the median probability of a discrepant item (with respect to packaging RODS) being received at a supporting supply activity is .00013. Therefore, the probability of a nondiscrepant item being shipped to a requisitioner who becomes the ultimate user of the item is .99987.

The next probability is that which reflects the probability of a packaging problem found by an ultimate user. This probability was also derived from survey results. The addressees for the survey were the requisitioners of the item that detected the discrepancy at their level. Addressee information was extracted from the CDCS. This survey is attached at Appendix A. The resultant median probability of a packaging ROD item is .00018; the probability of a receipt of a nondiscrepant item (with respect to packaging discrepancies) is therefore .99982.

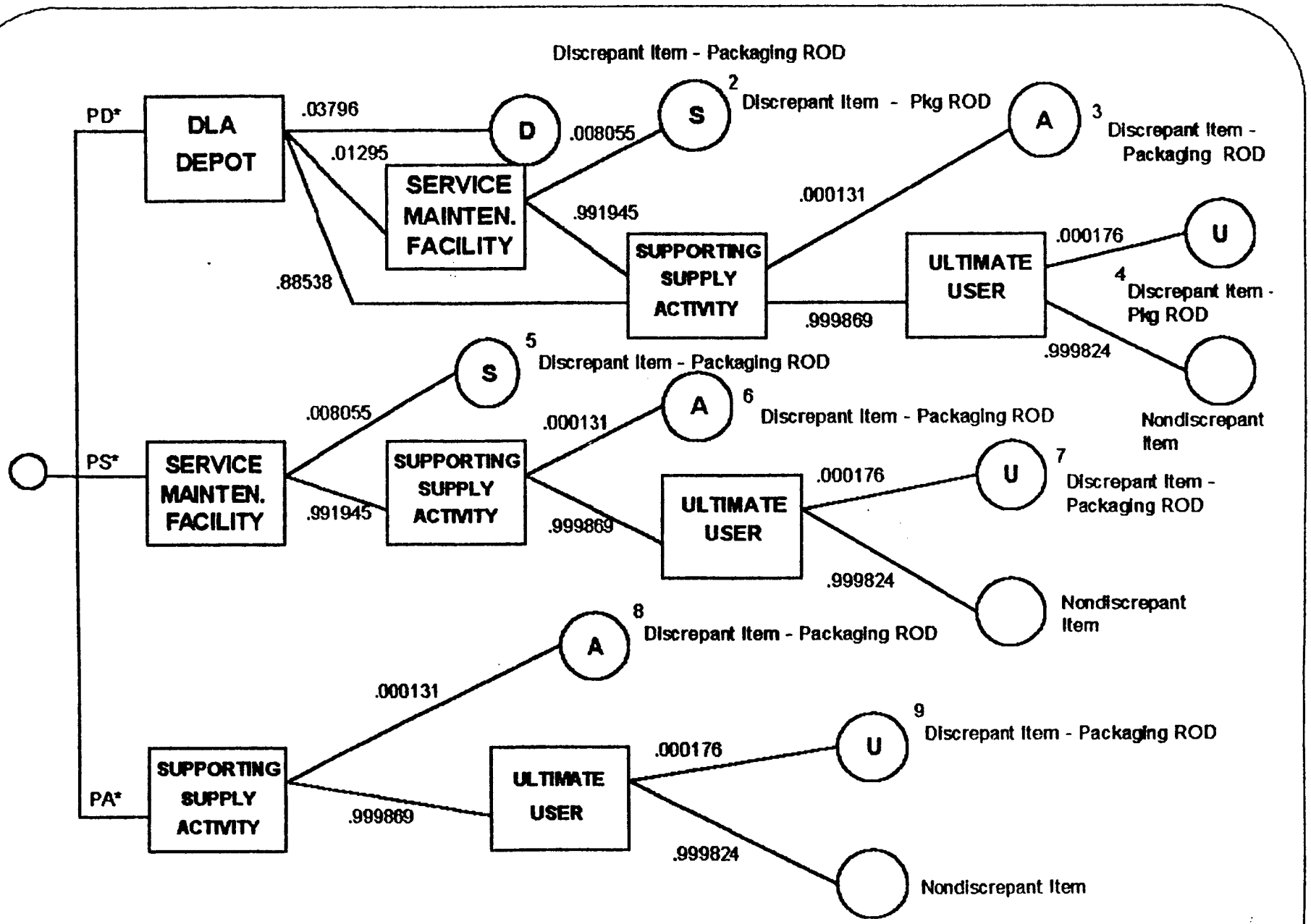
ENCLOSURE 1 TO APPENDIX D

DLA Depots

Designation	RIC
Mechanicsburg, PA	SA
Columbus, OH	SC
Memphis, TN	SM
Richmond, VA	SR
Ogden, UT	SU
Tracy, CA	SB

Service Maintenance Facilities

Designation	Service	RIC
Red River, TX	Army	BR
Sharpe, CA	Army	AQ
New Cumberland, PA	Army	SN
Anniston, AL	Army	BA4
Letterkenny, PA	Army	BK4
Sacramento, CA	Army	B56
Tobyhanna, PA	Army	BY6
Toole, UT	Army	BT4
McClellan, CA	Air Force	FF
Hill, UT	Air force	FG
Tinker, OK	Air Force	FH
Warner-Robins, GA	Air Force	FL
Kelly, TX	Air Force	FP
AFLC, Europe	Air Force	FD
Kimball, UK	Air Force	DC
Barstow, CA	Marines	MB
Cherry Point, NC	Marines	PT
Albany, GA	Marines	MA
Charleston, SC	Navy	NR
Corpus Christi, TX	Navy	B52
Norfolk, VA	Navy	NN
Jacksonville, FL	Navy	
Brementon, WA	Navy	NU
Pensacola, FL	Navy	
Oakland, CA	Navy	NO
San Diego, CA	Navy	ND
Pearl Harbor, HI	Navy	
Great Lakes, IL	Navy	NG
Philadelphia, PA	Navy	NJ
Subic Bay, Philippines	Navy	
Yokuska, Japan	Navy	



* PD, PS, PA differ for each center.

Figure D-1 MATERIAL FLOW PROBABILITY TREE

ENCLOSURE 2 TO APPENDIX D

Distribution of Contractor Shipments

ENCLOSURE 2 TO APPENDIX D

DISTRIBUTION OF CONTRACTOR SHIPMENTS

(All Active Contracts as of March 1994)

ACTIVITY SHIPPED TO

Center	Shipments to DLA Depots	Portion to DLA Depots	Shipments to Service Maint. Fac	Portion to Service Maint. Fac	Shipments to Retail Supply Pt	Portion to Retail Supply Pt	Total Shipments
DCSC	61,238	0.641444	3,303	0.034598	30,928	0.323959	95,469
DESC	60,406	0.624048	10,621	0.109724	25,770	0.266227	96,797
DGSC	65,961	0.415646	6,536	0.041186	86,198	0.543168	158,695
DISC	44,877	0.482237	21,603	0.232141	26,580	0.285622	93,060
DPSC (C&T)	69,534	0.813644	6,658	0.077908	9,268	0.108448	85,460
DPSC (Med)	21,620	0.221757	104	0.001067	75,770	0.777176	97,494
TOTAL	323,636	0.516187	48,825	0.077874	254,514	0.405940	626,975

ENCLOSURE 3 TO APPENDIX D

Material Release Orders (MROs)

From DLA Depots (3rd Qtr FY 93 thru 2nd Qtr FY 94)

ENCLOSURE 3 TO APPENDIX D

MATERIAL RELEASE ORDERS (MROs)

FROM DLA DEPOTS (3RD QTR FY 93 THRU 2ND QTR FY 94)

DLA DEPOT	TOTAL MROs	MROS TO DLA DEPOTS	TOTAL MROS LESS DLA DEPOTS	MROS TO SERVICE MAINT. FAC.	PROPORTION OF MROS TO SERVICE MAINT. FAC.	MROS TO OTHER ACTIVITIES	PROPORTION TO OTHER ACTIVITIES
DDMP	2,324,882	2,270	2,322,612	26,613	0.011447	2,295,999	0.988542
DDCO	1,721,008	554	1,720,454	30,859	0.017931	1,689,595	0.982063
DDMT	2,644,613	617	2,643,996	36,089	0.013646	2,607,907	0.986351
DDRV	1,961,123	135	1,960,988	43,341	0.022100	1,917,647	0.977898
DDOU	1,913,244	731	1,912,513	18,499	0.009669	1,894,014	0.990327
DDTC	2,106,691	1,426	2,105,265	15,204	0.007217	2,090,061	0.992778
TOTAL	12,671,561	5,733	12,665,828	170,605	0.013464	12,495,223	0.986530

APPENDIX E

Development of Packaging ROD Occurrence Probabilities

This appendix uses the probabilities developed in Appendix D (Enclosure 2) and displayed in Figure E-1 (similar to Figure D-1) to determine both "pure" and conditional probabilities in assessing the relative occurrence of discrepant material at each supply level. Material flow probabilities for shipments to various supply levels directly from a contractor were developed in Appendix D. These are again presented in Table E-1.

Table E-1

PROBABILITIES FOR CONTRACTOR SHIPMENT

	Activity Shipped To			
Center	DLA Depot (PD)	Maint Fac (PS)	Supporting Supply Activity (Retail Supply Point) (PA)	Total
DCSC	.64144	.03459	.32396	1.00000
DESC	.62405	.10972	.26623	1.00000
DGSC	.41565	.04119	.54317	1.00000
DISC	.48224	.23214	.28562	1.00000
DPSC (C&T)	.81364	.07791	.10845	1.00000
DPSC (MED)	.22176	.00107	.77718	1.00000
Centers Combined	.51619	.07787	.40594	1.00000

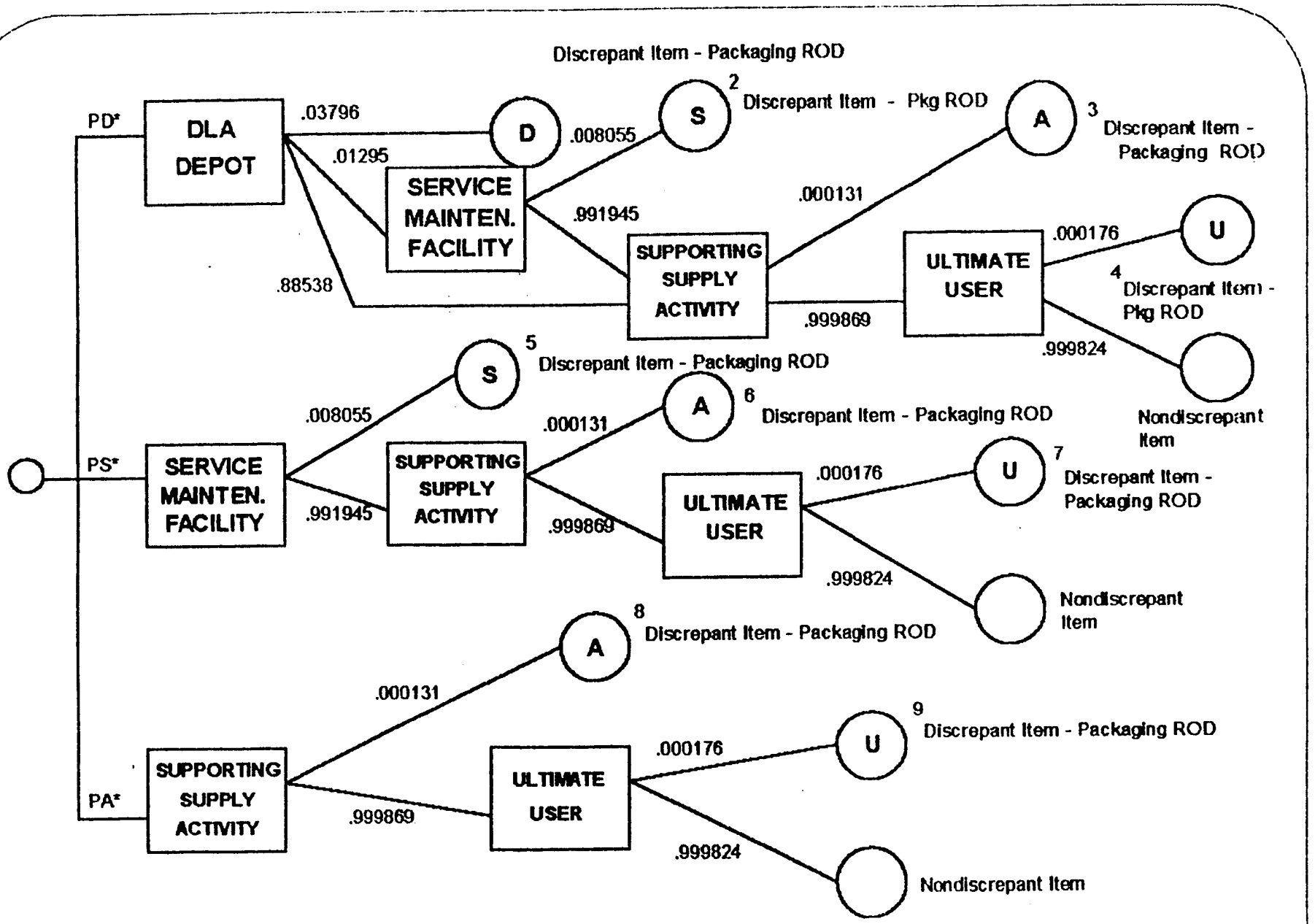
Since the probability that a shipment from a contractor to the various destinations differs depending upon what DLA supply center manages the item, each center will be considered individually. The following probabilities will be represented in the interim calculations of this appendix.

- "PD" represents the probability that a contractor ships directly to a DLA depot.
- "PS" represents the probability that a contractor ships directly to a service maintenance facility.
- "PA" represents the probability that a contractor ships directly to a supporting supply activity or retail supply point.

An example highlights the computation method. The probability that an item is shipped from a contractor to a DLA depot and a packaging problem is discovered at this depot is computed as:

P (item is shipped from contractor to a DLA depot)
x P (item is found to be discrepant at the depot)

= (PD) (.03796) (.03796) is obtained from Figure E-1) (PD would be a figure from Table E-1 depending on what center is considered)



* PD, PS, PA differ for each center. They are listed in Table E-1.

Figure E-1 MATERIAL FLOW PROBABILITY TREE

For DESC, since PD - .62405 (from Table E-1) , the probability that a packaging problem is found at a DLA depot and it is a DESC item is (.62405) (.03796) or .02369.

This is simply the product of the two probabilities along the branches in Figure E-1 leading to the packaging problem - and hence, packaging ROD submission - at a DLA depot. To capture the probability of any possible occurrence, the individual probabilities associated with the separate branches leading up to this occurrence are multiplied.

Table E-2 provides the calculation of all "pure" probabilities. The node numbers reference each possible outcome displayed in Figure E-1; the probabilities indicate the chance of occurrence of each of these outcomes.

Table E-2

COMPUTATION OF PROBABILITY OF PACKAGING ROD INITIATION

Node #	Location of Packaging ROD	Probability of Occurrence	
1	D (DLA Depot)	PD (.03796)	= .03796 PD
2	S (SVC Mt Fac)	PD (.01295) (.008055)	= .000104 PD
3	A (Sup Actv)	PD (.01295) (.991945) (.000131)	
		+PD (.94909) (.000131)	= .000126 PD
4	U (User)	PD (.01295) (.991945) (.999869) (.000176)	
		+PD (.94909) (.999869) (.000176)	= .000169 PD
5	S	PS (.008055)	= .008055 PS
6	A	PS (.991945) (.000131)	= .000130 PS
7	U	PS (.991945) (.999869) (.000176)	= .000175 PS
8	A	PA (.000131)	= .000131 PA
9	U	PA (.999869) (.000176)	= .000176 PA

The following probabilities are computed from Table E-2:

- The probability that a DLA depot detects a packaging problem and initiates a ROD is .03796 PD.

- The probability that a service maintenance facility detects a packaging problem and initiates a ROD is .000104 PD + .008055 PS.

- The probability that a supporting supply activity (retail supply point) detects a packaging problem and initiates a ROD is .000126 PD + .000130 PS + .000131 PA.

- The probability that a customer or user activity detects a packaging problem and initiates a ROD is .000180 PD + .000175 PS + .000176 PA.

Now that the first set of computations is finished, values will be assigned for PS, PD and PA based on the DLA Supply Center under consideration. Using the probabilities in Table E-1, a new set of probabilities will be generated. Each probability will represent the chance of occurrence of a packaging problem for a particular item that is managed by one of six (6) supply centers and that is discovered by one of the four (4) types of ROD initiators.

As an example, the probability that an item, managed by DGSC, is found to have a packaging problem, and is discovered at the retail supply point level (supporting supply activity (A)) is the sum of the probabilities at nodes 3, 6 and 8:

(.000126) (PD for DGSC) + (.000130) (PS for DGSC) + (.000131) (PA for DGSC)

= (.000126) (.41565) + (.000130) (.04119) + (.000131) (.54317)

= .00013

Table E-3 represents probabilities of occurrences of packaging ROD submission for each managing center and each receiving supply source. Each probability represents the chance that an item with a packaging problem is managed by a given center and is discovered at a given supply level.

Table E-3

PROBABILITIES OF OCCURRENCES OF PACKAGING RODS

Center Managing Item	DLA Depot	Service Maint Facil	Supporting Supply Activity	Customer Unit	Row Totals
DCSC	.02435	.00035	.00013	.00018	.02501
DESC	.02369	.00093	.00013	.00018	.02493
DGSC	.01578	.00037	.00013	.00018	.01646
DISC	.01831	.00192	.00013	.00018	.02054
DPSC (C&T)	.03089	.00071	.00013	.00018	.03191
DPSC (Med)	.00841	.00003	.00013	.00018	.00875
Column Totals	.12143	.00431	.00078	.00108	.1276

Each row total represents the probability that a discrepant item (for packaging) managed by a given center appears somewhere within the supply system. As an example, the probability that some supply level receives and detects a discrepant item managed by DISC is .02054. Similarly, each column total represents the probability that a nonconforming DLA item appears at a given level of supply. The probability that a packaging problem occurs at a DLA depot is .12143.

Conditional probabilities will now be developed with respect to each DLA supply center. This is accomplished by dividing each row probability by the row total. As an example, given that an item is managed by DGSC is discrepant, the probability of its detection at a service maintenance facility becomes:

P (discrepant item at a service maintenance facility given it is a DGSC item with a packaging discrepancy)

=

P (discrepant item at a service maintenance facility and a discrepant DGSC item) / P (DGSC item with a packaging discrepancy)

$$= \frac{.00037}{.01646}$$

$$= .02248$$

Table E-4 provides a matrix of all conditional probabilities with respect to DLA supply centers. The probabilities in any row will now sum to 1.

Table E-4

CONDITIONAL PROBABILITIES OF OCCURRENCES OF PACKAGING RODS

(With Respect to Supply Centers)

Supply Level (Complaint Initiator)

Center Managing Item	DLA Depot	Service Depot	Supporting Supply Activity	Customer Unit	Total
DCSC	.97361	.01399	.00520	.00720	1.0000
DESC	.95026	.03730	.00521	.00722	1.0000
DGSC	.95869	.02248	.00790	.01094	1.0000
DISC	.89143	.09348	.00633	.00876	1.0000
DPSC (C&T)	.96804	.02225	.00407	.00564	1.0000
DPSC (Med)	.96114	.00343	.01486	.02057	1.0000

The probabilities associated with each center irrespective of any level of supply are now calculated. Taking each row total from Table E-3, and dividing it by the row-column total of .12760 (bottom right figure on Table E-3), individual center probabilities are generated. For example, given that a discrepant item (for packaging) appears in the supply system, the probability that it is a DCSC item is:

$$\frac{\text{Row Total of DCSC}}{\text{Row-Column Total}}$$

$$= \frac{.02501}{.12760}$$

$$= .19600$$

The entire set of probabilities is shown in Table E-5. The sum of all probabilities is equal to one.

Table E-5

PROBABILITIES OF OCCURRENCES OF PACKAGING RODS

(By Center Only)

Center	Probability
DCSC	.19600
DESC	.19538
DGSC	.12900
DISC	.16097
DPSC (C&T)	.25008
DPSC (Med)	.06857
Total	1.00000

APPENDIX F

Development of Materiel Distribution Probabilities for Shipping RODs

The process for calculating distribution probabilities for materiel that would result in shipping ROD submission mirrors that used for packaging discrepancies. Therefore, only numerical results need to be presented in this appendix.

The flow diagram, Figure F-1, summarizes all probabilities derived in this appendix. "PD", "PS", and "PA", as for packaging RODS, represent the probabilities that a contractor will ship materiel directly to, respectively, a DLA depot, a service maintenance facility and a supporting supply activity or retail supply point. These vary from center to center and were calculated in Appendix D. The administrative cost accumulated for a shipping ROD that is initiated by a DLA depot, a service maintenance facility, a supporting supply activity and a customer unit is represented, respectively by "D_s", "S_s", "A_s", and "U_s".

The first set of probabilities describes the distribution of shipments at a DLA depot which is affected by the number of discrepant items because of shipping problems. The data sets utilized for the analysis of packaging RODs- the CDCS database, the MRO historical files and the ACF- are utilized in a similar fashion in this appendix.

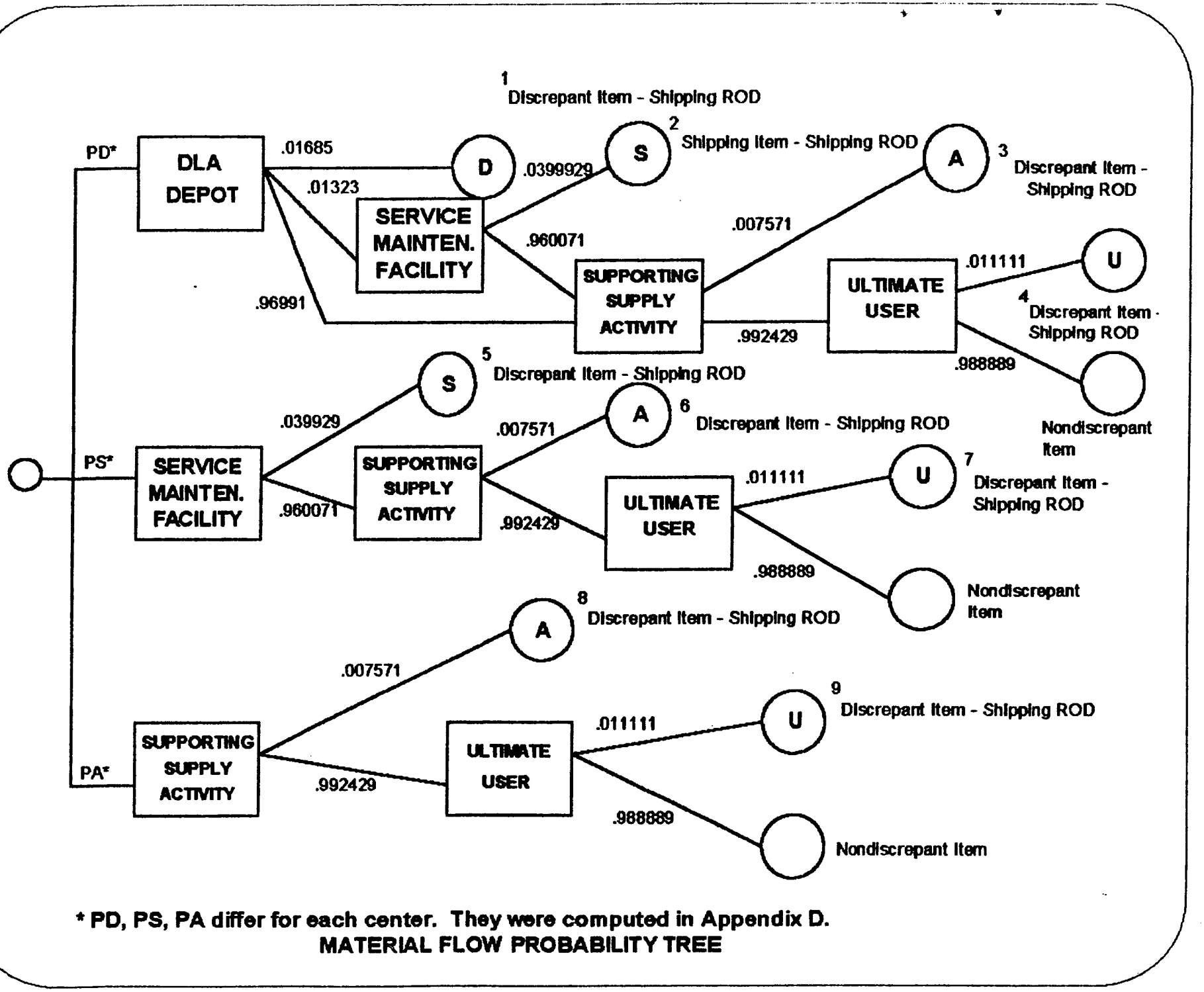
All records on the CDCS which could be associated with a specific DLA depot (identified by RIC) and particular type of shipping ROD were extracted. ROD records which had a discrepancy code beginning with "C", "D", "M", "O", "S" or "W" were counted. The ratio of the number of shipping RODs to the number of receipts (from the ACF of March 1994) provided an estimate of the probability of a shipping problem- and the initiation of a shipping ROD at each of the six DLA depots. Results are given in the following table.

Table F-1

DLA DEPOT SHIPPING AND PROBABILITY CALCULATIONS

Depot	No. of DLA Depot Shipments	No. of Shipping RODs	Prob. of Shipping ROD
DDCO (Columbus, OH)	33306	378	.01135
DDMP (Mechanicsburg, PA)	58133	963	.01657
DDMT (Memphis, TN)	45133	579	.01283
DDOU (Ogden, UT)	46783	1325	.02832
DDRV (Richmond, VA)	68767	1005	.01461
DDTC (Tracy, CA)	56767	987	.01739

The average shipping ROD probability- across all depots- will be utilized in further calculations. The probability of a DLA depot-initiated shipping ROD is therefore .01685.



* PD, PS, PA differ for each center. They were computed in Appendix D.

MATERIAL FLOW PROBABILITY TREE

Figure F-1

Intermediate results within Appendix D showed that the probability that a DLA depot effects a shipment to a service maintenance facility is .01346 (Enclosure 3 to Appendix D). This probability is conditional given that the item is believed to be "error-free." The probability a shipment is made to a service maintenance facility is actually:

P (Item is error-free) (no shipping problems)
x P (Shipment to a service maintenance facility given that item is error-free)

= (1 - .01685) (.01346)

= .01323

Similarly, the probability that a shipment from a DLA depot is destined for a supporting supply activity or retail supply point is:

P (Item is error-free)
x P (Shipment to a retail supply point given that item is error-free)

= (1 - .01685) (.98653) (.98653 is retrieved from Enclosure 3 to Appendix D)

= .96991

The probability statistics for customer activities, retail supply points and service maintenance facilities were gathered from surveys. The procedures used and the computations generated follow the same pattern as those stated in Appendix D for packaging RODS. At all levels, the probability of a shipping ROD occurrence is estimated by the ratio of the number of shipping RODs actually generated by a specific activity to the number of receipts at that activity. The median of all probability estimates for each of the three non-DLA ROD initiators is used in further computations. The results are given in the following table.

Table F-2

SURVEY STATISTICS

Shipping ROD Initiator	Probability of Shipping ROD	Probability of Nondiscrepant Item (with respect to Shipping ROD)
Customer Activity (User)	.01111	.98889
Supporting Supply Activity	.00757	.99243
Service Maintenance Facility	.03993	.96007

These probabilities are imposed on the flow diagram at Figure F-1.

APPENDIX G

Development of Shipping ROD Occurrence Probabilities

This appendix uses the probabilities developed in Appendix F to determine both "pure" and conditional probabilities in assessing the relative occurrence of discrepant material at each supply level. Materiel flow probabilities for shipments to various supply levels directly from a contractor were developed in Appendix D. These are presented again in Table G-1.

Table G-1

PROBABILITIES FOR CONTRACTOR SHIPMENT

	Activity Shipped To			
Center	DLA Depot (PD)	Service Depot (PS)	Supporting Supply Activity (Retail Supply Point) (PA)	Total
DCSC	.64144	.03459	.32396	1.00000
DESC	.62405	.10972	.26623	1.00000
DGSC	.41565	.04119	.54317	1.00000
DISC	.48224	.23214	.28562	1.00000
DPSC (C&T)	.81364	.07791	.10845	1.00000
DPSC (MED)	.22176	.00107	.77718	1.00000
Centers Combined	.51619	.07787	.40594	1.00000

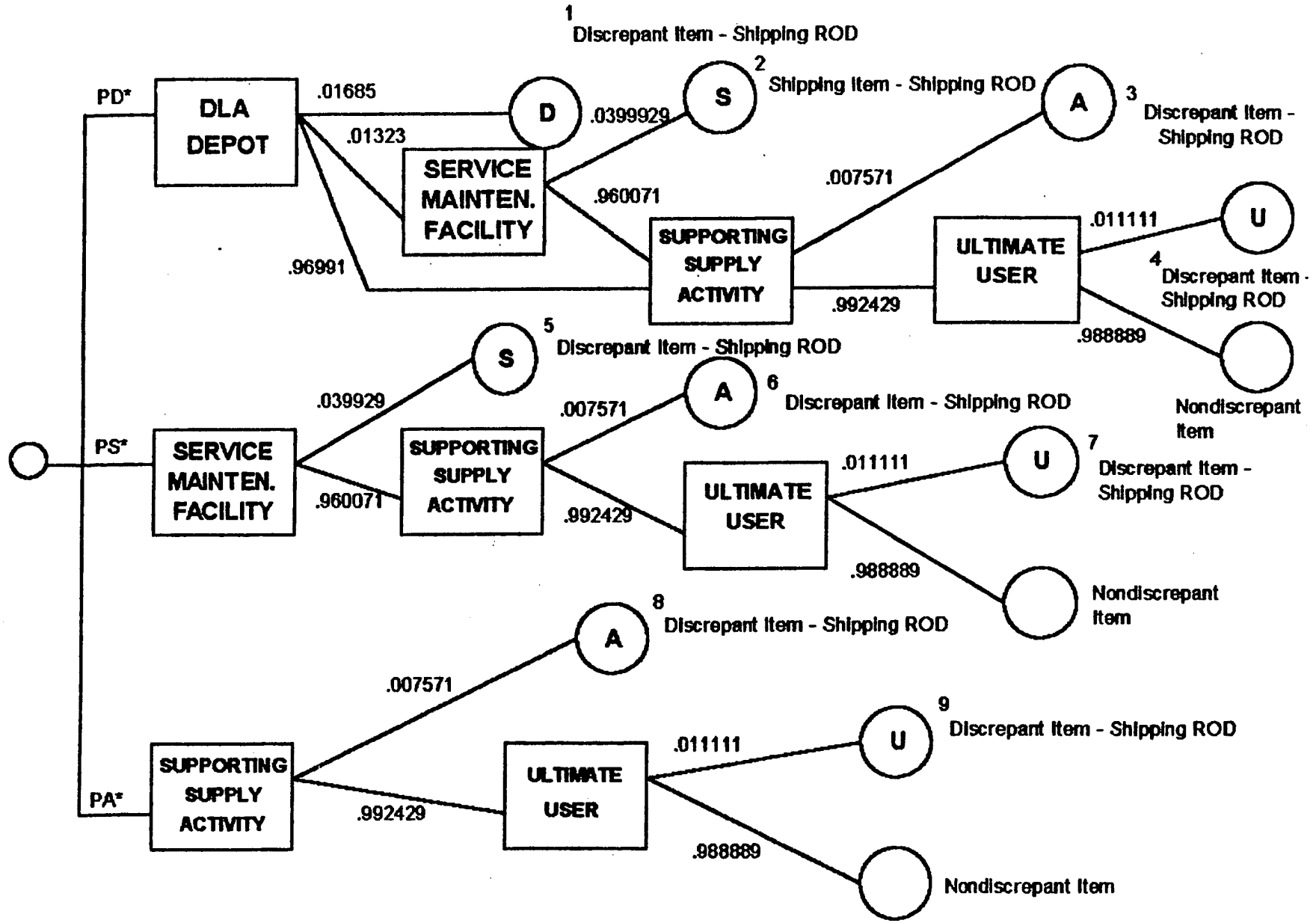
The following probabilities will be represented in the interim calculations of this appendix:

- "PD" represents the probability that a contractor ships directly to a DLA depot.

- "PS" represents the probability that a contractor ships directly to a service maintenance facility.

- "PA" represents the probability that a contractor ships directly to a supporting supply activity or retail supply point.

The calculations for determining probabilities for occurrences of shipping RODs follows the same pattern as that for packaging RODs. The procedures are described in Appendix E. For each node on Figure G-1, a probability is assigned. The entire set of occurrence probabilities is demonstrated in Table G-2.



* PD, PS, PA differ for each center. They were computed in Appendix D.

Figure G-1 MATERIAL FLOW PROBABILITY TREE

Table G-2

CALCULATION OF PROBABILITY OF SHIPPING ROD INITIATION

Node #	Location of Packaging ROD	Probability of Occurrence	
1	D (DLA Depot)	PD (.01685)	= .01685 PD
2	S (Svc Mt Fac)	PD (.01323) (.039929)	= .00053 PD
3	A (Sup Actv)	PD (.01323) (.960071) (.007571) +PD (.96991) (.007571)	= .00744 PD
4	U (User)	PD (.01323) (.960071) (.992429) (.011111) +PD (.96991) (.992429) (.011111)	= .01084 PD
5	S	PS (.039929)	= .039929 PS
6	A	PS (.960071) (.007571)	= .007269 PS
7	U	PS (.960071) (.992429) (.011111)	= .010587 PS
8	A	PA (.007571)	= .007571 PA
9	U	PA (.992429) (.011111)	= .011027 PA

The following probabilities are computed from Table G-2:

- The probability that a DLA depot detects a shipping problem and initiates a ROD is .01685 PD.

- The probability that a service maintenance facility detects a shipping problem and initiates a ROD is .00053 PD + .039929 PS.

- The probability that a supporting supply activity (retail supply point) detects a shipping problem and initiates a ROD is .00744 PD + .00727 PS + .00757 PA

- The probability that a customer or user activity detects a shipping problem and initiates a ROD is .01084 PD + .01059 PS + .01103 PA.

Values will be assigned for PS, PD and PA based on the DLA Supply Center under consideration. Using the probabilities in Table G-1, a new set of probabilities will be generated. Each probability will represent the chance of occurrence of a shipping problem for a particular item that is managed by one of six (6) supply centers and that is discovered by one of the four (4) types of ROD initiators.

As an example, the probability that an item is managed by DGSC, is found to have a shipping problem, and is discovered at the retail supply point level (supporting supply activity A) is the sum of the probabilities at nodes 3, 6 and 8:

(.00744) (PD for DGSC) + (.00727)(PS for DGSC) + (.00757)(PA for DGSC)

= (.00744) (.41565) + (.00727) (.04119) + (.00757) (.54317)

= .00750

Table G-3 represents probabilities of occurrences of shipping ROD submission for each managing center and each receiving supply source. Each probability represents the chance that an item with a shipping problem is managed by a given center and is discovered at a given supply level.

Table G-3

PROBABILITIES OF OCCURRENCES OF SHIPPING RODS

Center Managing Item	DLA Depot	Service Maint Facil	Supporting Supply Activity	Customer Unit	Row Totals
DCSC	.01081	.01415	.00748	.01089	.04333
DESC	.01052	.04414	.00746	.01086	.07298
DGSC	.00700	.01667	.00750	.01093	.04210
DISC	.00813	.09295	.00744	.01084	.11936
DPSC (C&T)	.01371	.03154	.00744	.01084	.06353
DPSC (Med)	.00374	.00054	.00754	.01099	.02281
Column Totals	.05391	.19999	.04486	.06535	.36411

Each row total represents the probability that a discrepant item (for shipping) managed by a given center appears somewhere within the supply system. As an example, the probability that some supply level receives and detects a discrepant item managed by DISC is .11936. Similarly, each column total represents the probability that a discrepant DLA item appears at a given level of supply. The probability that a discrepant DLA item appears at a DLA depot is .05391.

Conditional probabilities will now be developed with respect to each DLA supply center. This is accomplished by dividing each row probability by the row total. As an example, given that an item is managed by DGSC is discrepant, the probability of its detection at a service maintenance facility becomes:

P (discrepant item at a service maintenance facility given it is a DGSC item with a shippingdiscrepancy)

= P (discrepant item at a service maintenance facility and a discrepant DGSC item)
/ P (DGSC item with a shipping discrepancy)

$$= \frac{.01667}{.04210}$$

= .39596

Table G-4 provides a matrix of all conditional probabilities with respect to DLA supply centers. The probabilities in any row will now sum to 1.

Table G-4

CONDITIONAL PROBABILITIES OF OCCURRENCES OF SHIPPING RODS

(With Respect to Supply Centers)

Supply Level (Complaint Initiator)

Center Managing Item	DLA Depot	Service Maint Facil	Supporting Supply Activity	Customer Unit	Total
DCSC	.24948	.32656	.17263	.25133	1.0000
DESC	.14415	.60482	.10222	.14881	1.0000
DGSC	.16627	.39596	.17815	.25962	1.0000
DISC	.06811	.77873	.06233	.09082	1.0000
DPSC (C&T)	.21580	.49646	.11711	.17063	1.0000
DPSC (Med)	.16396	.02367	.33056	.48181	1.0000

The probabilities associated with each center irrespective of any level of supply are now calculated. Taking each row total from Table G-3, and dividing it by the row-column total of .173719 (bottom right figure on Table G-3), individual center probabilities are generated. For example, given that a discrepant item (for shipping) appears in the supply system, the probability that it is a DCSC item is:

$$\frac{\text{Row Total of DCSC}}{\text{Row-Column Total}}$$

$$= \frac{.04333}{.36411}$$

$$= .119002$$

The entire set of probabilities is shown in Table C-5. The sum of all probabilities is equal to one.

Table C-5

PROBABILITIES OF OCCURRENCES OF SHIPPING RODS

(By Center Only)

Center	Probability
DCSC	.11900
DESC	.20043
DGSC	.11562
DISC	.32781
DPSC (C&T)	.17448
DPSC (Med)	.06265
Total	1.00000

APPENDIX H

Development of Costs and Associated Probabilities for Customers, Supply Support Activities and Service Maintenance Facilities for Packaging RODs

This appendix will address the computation of costs of all actions performed by customers of the supply system, retail supply points, and service maintenance facilities for packaging ROD processing. These actions specifically apply to the identification of discrepant materiel, the initiation of a ROD, the administration required for both "paperwork" actions and supply management functions, and the necessary follow-up tasks performed up to the ultimate resolution of the ROD.

Before the specific calculations for this appendix are made, the basic development of personnel costs - used throughout all calculations within this analysis - is explained.

For each task performed by a civilian, the expended hours were inflated using the Personnel Fatigue and Delay (PFD) factor of 11.4 percent. This PFD factor is utilized for most organizations within DLA that have published Special Purpose Data (SPD) standards. This factor was extended to all civilian employees in non-DLA activities and accounts for any distractions or delays in the work environment including breaks and personal needs. The set of new required task hours was then multiplied by the per-hour rate, (based on the rank of the person performing the task) to compute the base employee task cost. For general schedule (GS) employees, the rates from the latest version of the Federal Employees Almanac were utilized. For wage grade (WG) employees, pay rates were received from the Department of Defense Wage Fixing Authority. When a WG employee was encountered as the performer of a specific task, the survey originator was matched against the appropriate wage area to derive the proper hourly rate. This rate, combined with the inflated required task hours, produced the WG employee task cost. For both GS and WG employees, the base task cost was then increased by a factor of 18 percent to account for leave (sick, annual and holiday). This result was then increased by 29.55 percent to account for the various elements under the category of "fringe" benefits. Both factors are fully explained in DLAM 7041.1, Economic Analysis. These "enhanced" individual task costs were summed to obtain the entire activity cost.

For each task performed by an individual in one of the military services, the information base was the most recent copy of DLAM 7000.1 and a current pay chart (January 1995). Dividing the monthly pay rates by the DLAM 7000.1 factor of 173 working hours per month produces the hourly rate. This rate was inflated by 33 percent for retirement accrual, 14 percent for leave and holiday absences, and 18 percent for other personnel costs. These factors were applied independently (not sequentially) to acquire the enhanced individual task cost. The individual task costs were then added to gain the whole activity cost.

In deriving the cost incurred by all activities, data collected through the surveys (Appendices A, B, and C) was reviewed, compiled and transformed into monetary terms. The general procedure was presented in the main text of this report.

Adhering to the method described above, the median cost to the customer (ultimate user) for the initiation of a packaging ROD is determined to be $92.61. Eventually, the customer will be given instructions- usually, by a DLA supply center- in the final stage of the ROD resolution process. In performing actions necessary to comply with these instructions, the total of all response costs for the customer is $12.09. The total median cost to a customer is therefore $92.61 + $12.09 or $104.70.

If a ROD is generated by a supporting supply activity (retail supply point), the median total accumulated initiation cost is $54.88. Reaction to disposition instructions will cost the supply point $8.09. Total involvement cost is therefore $54.88 + $8.09 or $62.97.

The packaging ROD initiation cost for a service maintenance facility is $153.96. The response cost to a service maintenance facility is $27.10, making the total median cost to the service maintenance facility $153.96 + $27.10 or $181.06

APPENDIX I

Development of Costs and Associated Probabilities for Customers, Supply Support Activities, and Service Maintenance Facilities for Shipping RODs

The method used for the cost calculations of shipping RODs follows that utilized for packaging RODs. However, a shipping ROD may be one of several types, each of which accumulates a different cost. Therefore, a relative distribution of different types of shipping RODs at each of the three considered supply levels was developed. This probability distribution was generated by dividing the number of each type of shipping ROD by the total number of shipping RODs for each completed survey. The median probability (or relative occurrence) for each type shipping ROD was computed. This new set of median probabilities was then "scaled" to ensure that the sum was equal to 1.00000, thus forming a median probability distribution of shipping RODs for each type of ROD initiator.

Table I-1 provides for customer-initiated shipping RODS, the initiation cost, response cost (reaction to disposition instructions), and the resulting total cost for each type shipping ROD. The median probability distribution for occurrences discussed above is provided. The expected cost of each type shipping ROD is the product of the ROD cost and the probability of occurrence. The total expected cost of involvement is simply the sum of the individual ROD expected costs. In the case of customer shipping RODS, this total is $107.90.

Table I-1

EXPECTED COST CALCULATION FOR SHIPPING RODS

(CUSTOMER-INITIATED)

Type of ROD	Initiator Cost	Response Cost	Total Cost	Occurrence Probability	Expected Cost
Poor Condition or Damage	$92.61	$32.47	$125.08	.157712	$ 19.73
Supply Documentation	$92.61	$12.09	$104.70	.010999	$ 1.15
Misdirected Shipment	$74.17	$30.49	$104.66	.015451	$ 1.62
Wrong Item	$74.17	$30.49	$104.66	.407167	$ 42.61
Overage	$92.61	$12.09	$104.70	.046136	$ 4.83
Shortage	$92.61	$12.09	$104.70	.362535	$ 37.96
TOTALS				1.000000	$107.90

The same analysis was performed for shipping RODs generated by supporting supply activities or retail supply points. The cost of each type of shipping ROD was weighted by its probability of occurrence. Summing the individual cost produces a total of $67.80 for the expected cost of a shipping ROD initiated by a retail supply activity.

Table I-2

EXPECTED COST CALCULATION FOR SHIPPING RODS

(SUPPLY POINT-INITIATED)

Type of ROD	Initiator Cost	Response Cost	Total Cost	Occurrence Probability	Expected Cost
Poor Condition or Damage	$54.88	$46.62	$101.50	.029295	$ 2.97
Supply Documentation	$54.88	$ 8.09	$ 62.97	.000955	$ .06
Misdirected Shipment	$49.81	$36.93	$ 86.74	.002790	$ .24
Wrong Item	$49.81	$36.93	$ 86.74	.152731	$ 13.25
Overage	$54.88	$ 8.09	$ 62.97	.107144	$ 6.75
Shortage	$54.88	$ 8.09	$ 62.97	.707085	$ 44.53
TOTALS				1.000000	$ 67.80

Table I-3 presents the cost data, ROD probabilities and expected cost calculations for shipping RODs originating at service maintenance facilities. The expected cost of a generic shipping ROD to a service maintenance facility is $201.74.

Table I-3

EXPECTED COST CALCULATION FOR SHIPPING RODS

(SERVICE MAINTENANCE FACILITY-INITIATED)

Type of ROD	Initiator Cost	Response Cost	Total Cost	Occurrence Probability	Expected Cost
Poor Condition or Damage	$153.96	$82.08	$236.04	.280237	$ 66.15
Supply Documentation	$145.11	$27.10	$172.21	.111258	$ 19.16
Misdirected Shipment	$139.83	$82.08	$221.91	.066413	$ 14.74
Wrong Item	$139.83	$82.08	$221.91	.167614	$ 37.20
Overage	$145.11	$27.10	$172.21	.142037	$ 24.46
Shortage	$145.11	$27.10	$172.21	.232441	$ 40.03
TOTALS				1.000000	$201.74

APPENDIX J

Development of Costs and Associated Probabilities - DLA Depot for Packaging RODs

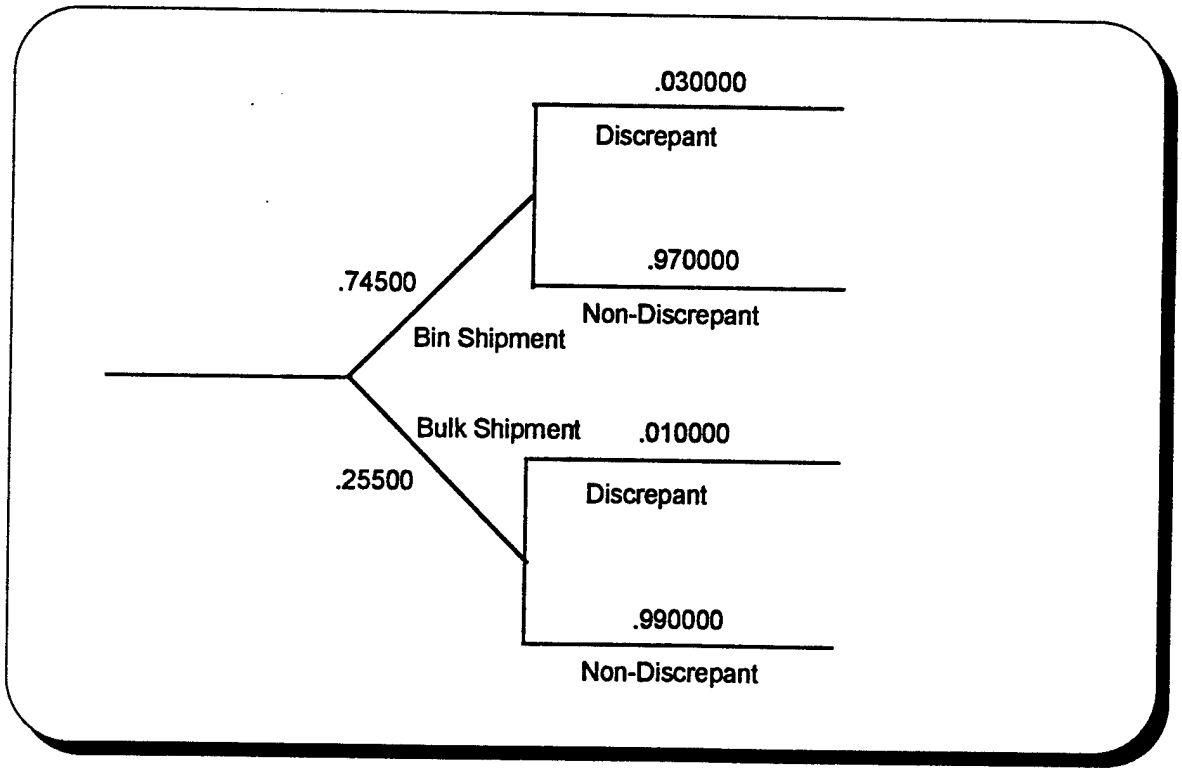
For this project, it will be assumed that all depots have essentially the same basic mission and carry similar proportions of commodities managed by all supply centers. Depots are primarily geographically oriented for support - centers are commodity oriented. The average of the percentage of bulk and bin receipts for all depots is utilized as the probability of a bin-versus-bulk shipment at a DLA depot in this analysis.

The probability that an item received would be discrepant varies slightly - depending upon whether the item is considered a bulk item or a bin storage item. In order to determine the probability that a DLA depot receives a less-than-perfect shipment, SPD standards 3271 and 3272 were reviewed. SPD Standard 3271 states that the relative occurrence (probability) of a DLA depot shipment being forwarded to the "Packaging, Packing, Preservation and Marking" (PPP&M) element of the depot is .030000 for a bin shipment. This figure is interpreted (in this study) as the probability that a bin shipment will have a packaging problem. Similarly, the corresponding probability for a bulk shipment, according to SPD Standard 3272, is .010000. The following figure demonstrates the probabilities assessed thus far.

Figure J-1

Packaging ROD Occurrence Probabilities

(Bin and Bulk)



The entire packaging ROD process followed within a DLA depot is presented in Enclosures 1 and 2. In both cases, DLA Special Purpose Data (SPD) Standards 3271 and 3272 were utilized in the development of the flow of material when it is discovered to be discrepant due to a packaging problem. SPD Standard 3271 covers bin shipments; SPD Standard 3272 covers bulk shipments. The analysis, therefore, will stratify calculations with respect to both types of shipments. The information in SPD standards were "purified" with respect to actions actually performed at Defense Depot Richmond Virginia (DDRV).

Major tasks were identified for both Phase I (receipt of discrepant material) and Phase II (response to disposition instructions). Hours needed to perform each task were captured. The grade of the person performing each task was gathered using DDRV as the model for all DLA depots. Using the labor cost rate and hours required for a task provides a cost for that task. The total costs for bin and bulk transactions for each of the two phases are calculated.

The probability that a discrepant shipment arrives at a DLA depot relative to occurrences at other supply levels - was assessed in Appendix E for packaging RODS. However, given that a packaging problem has occurred at a DLA depot, additional computations must be made to account for the bin and bulk distribution scheme.

To assess the probability that any item received by a DLA depot is discrepant, the proportions of bin and bulk shipments at each of the depots was considered to conform to the SPD standards. Table J-1 displays the data provided by the receiving division at each of the six DLA depots. This information represents several months of receipt information.

Table J-1

BIN/BULK SHIPMENTS AT DLA DEPOTS

Depot	% Bulk Shipments	% Bin Shipments
DDCO	15	85
DDMP	32	68
DDMT	27	73
DDOU	25	75
DDRV	18	82
DDTC	36	64
Average for all Depots	25.5	74.5

The probability that a shipment was discrepant (packaging problem) regardless of whether it was considered bin or bulk is:

P (discrepant shipment)

= P (discrepant bin shipment) + P (discrepant bulk shipment)

= P (shipment was bin and was discrepant)

+ P (shipment was bulk and was discrepant)

= P (bin shipment) x P (shipment was discrepant given it was a bin shipment)
+ P (bulk shipment) x P (shipment was discrepant given it was a bulk shipment)

= (.745000) (.030000) + (.255000) (.010000)

= .022350 + .002550

= .024900

The probability of a bin shipment occurrence if the shipment was determined to be discrepant is

$$= \frac{\text{P (shipment was bin and was discrepant}}{\text{P (shipment was discrepant)}}$$

$$= \frac{.022350}{.024900}$$

= .897590

The probability of a bulk shipment occurrence if the shipment was determined to be discrepant is:

$$= \frac{\text{P (shipment was bulk and was discrepant)}}{\text{P (shipment was discrepant)}}$$

$$= \frac{.002550}{.024900}$$

= .102410

Cost calculations are now discussed. Most functions at a depot are performed by wage grade employees. To capture the costs of the receipt and disposition instruction response to discrepant materiel at a DLA depot, salaries were gathered for each of the six depots, since wage grade employees are paid primarily as a function of the cost of living associated with a depot's surrounding area. An average salary rate across all depots was then computed. The rates used are in the table below.

Table J-2

WAGE GRADE HOURLY SALARIES

Wage Grade	DDCO	DDMP	DDMT	DDOU	DDRV	DDTC	Average
WG-7 (Inspectors)	13.40	13.07	12.74	12.98	12.98	13.68	13.14
WG-5 (Other Workers)	12.12	11.92	11.07	11.39	11.53	12.59	11.77

Since all personnel at a DLA depot are civilians, and since all personnel that play a part in the ROD process at the DLA supply center level will be assumed to be civilians, a computational factor that incorporates personal fatigue, leave and fringe benefits will be computed. This factor will be utilized for all DLA depots and centers.

The base cost of a task specified in any standard is the simple product of the hourly rate and the number of hours required. The base total cost of an activity is the sum of all individual task costs. This total is "T." The 11.4 percent personal fatigue and delay SPD factor normally applied to hours - can be equivalently applied to activity costs. The new total becomes:

$$T + 11.4\%T \text{ or } 1.114T$$

Applying a leave factor of 18.0 percent to this total, the next total in the purification process is:

$$1.114T + 18.0\% (1.114T)$$

$$= (1.18)(1.114)T \text{ or } 1.31452T$$

Lastly, the fringe benefit factor of 29.55% is incorporated:

$$1.31452T + 29.55\% (1.31452T)$$

$$(1.2955)(1.31452)T \text{ or } 1.70296T$$

This multiplicative factor of 1.70296 will be used for all cost computations for all activities for the remaining portions of this study.

Enclosure 1 to this appendix calculates and reports the cost of detecting and processing a packaging ROD (Phase I) to be $28.98 for a bin shipment and $30.96 for a bulk shipment. These are "enhanced" costs which include the application of the fringe benefit and leave factor.

Enclosure 2 reports the cost of responding to disposition instructions (Phase II) to be $17.63 for a bin shipment and $22.82 for a bulk shipment.

The total cost accumulated for all actions pertaining to a packaging ROD is therefore ($28.98 + $17.63) or $46.61 for a bin shipment and ($30.96 + $22.82) or $53.78 for a bulk shipment.

The "expected" cost of a packaging ROD to a DLA depot is:

P (Discrepant Bin Shipment) x (Cost of Bin Shipment Packaging ROD)

\+ P (Discrepant Bulk Shipment) x (Cost of Bulk Shipment Packaging ROD)

= (.897590) ($46.61) + (.102410) ($53.78)

= $47.35

ENCLOSURE 1 TO APPENDIX J

Phase I: Detecting Discrepancies and Processing RODs

Enclosure 1 to Appendix J

Receipt of Discrepant Items at DLA Depot (Phase I)
Detecting Discrepancy and Processing Packaging ROD

Bin Shipment

	Time Expended		Time x Hourly Pay
Research Documentation & Verify Number and Condition of Boxes	.0980 hours[1]	WG-7[3]	$ 1.29
Inspection of Bin Shipment	.0943 hours[1]	WG-7[3]	$ 1.24
Administrative Actions to Place Item in Suspended Status	.0542 hours[1]	WG-7[3]	$ .71
Action Peculiar to Packaging, Packing, Preservation & Marking (PPP&M) Functions	.0603 hours[1]	WG-7[3]	$ .79
Material Handling	.5000 hours[3]	WG-5[3]	$ 5.89
Surveillance Actions	.5406 hours[3]	WG-7[3]	$ 7.10
	BASE TOTAL		$ 17.02
	ADJUSTED TOTAL		$ 28.98

Bulk Shipment

Research Documentation & Verify Number and Condition of Pallets and Boxes	.1206 hours[2]	WG-7[3]	$ 1.58
Inspection of Bulk Shipment	.1350 hours[2]	WG-7[3]	$ 1.77
Administrative Actions to Place Item in Suspended Status	.0527 hours[2]	WG-7[3]	$ .69
Action Peculiar to Packaging, Packing, Preservation & Marking (PPP&M) Functions	.0873 hours[3]	WG-7[3]	$ 1.15
Material Handling	.5000 hours[3]	WG-5[3]	$ 5.89
Surveillance Actions	.5406 hours[3]	WG-7[3]	$ 7.10
	BASE TOTAL		$ 18.18
	ADJUSTED TOTAL		$ 30.96

1 Source of Data: DLA SPD Standard 3271
2 Source of Data: DLA SPD Standard 3272
3 Source of Data: DDRV Information

ENCLOSURE 2 TO APPENDIX J

Phase II: Response to Disposition Instructions

Enclosure 2 to Appendix J

Receipt of Discrepant Item at DLA Depot (Phase II)
Response to Packaging ROD Disposition Instructions

Bin Shipment

	Time Expended		Time x Hourly Pay
Perform Various Administrative Actions in Reaction to Disposition	.0910 hours[1]	GS-5[3]	$ .96
Retrieve Discrepant Stock	.1015 hours[1]	WG-7[3]	$ 1.33
Verify Stock for Shipment and Prepare Pack	.5406 hours[1]	WG-7[3]	$ 7.10
Prepare Material Release Order (MRO) (To Contractor)	.0910 hours[3]	GS-5[3]	$ .96
	BASE TOTAL		$ 10.35
	ENHANCED TOTAL		$ 17.63

Bulk Shipment

Perform Various Administrative Actions in Reaction to Disposition	.0910 hours[2]	GS-5[3]	$ .96
Retrieve Discrepant Stock	.3333 hours[2]	WG-7[3]	$ 4.38
Verify Stock for Shipment and Prepare Pack	.5406 hours[2]	WG-7[3]	$ 7.10
Prepare Material Release Order (MRO) (To Contractor)	.0910 hours[3]	GS-5[3]	$ .96
	BASE TOTAL		$ 13.40
	ENHANCED TOTAL		$ 22.82

1 Source of Data: DLA SPD Standard 3271
2 Source of Data: DLA SPD Standard 3272
3 Source of Data: DDRV Information

APPENDIX K

Development of Costs and Associated Probabilities

DLA Depot - Shipping RODs

The calculation of the expected costs incurred by a DLA depot when it detects and reports a shipping problem and reacts to disposition instructions follows the same procedures as those taken for packaging RODS. However, since there are different types of shipping RODS, an averaging process must occur to derive the cost of a "generic" shipping ROD.

The probability that a discrepant shipment arrives at a DLA depot relative to occurrences at other supply levels was assessed in Appendix G for shipping RODS. However, given that a shipping problem has occurred at a DLA depot, additional computations must be made to account for the bin and bulk categories of shipments since the SPD standards (3271 and 3272) discriminate between shipment types.

SPD Standard 3271 states that the probability that a bin shipment will be processed directly into storage ("forward to warehousing") is .950000. Therefore, the probability that a shipment will have at least one flaw with it is .050000. SPD Standard 3271 does not explicitly state that the probability of a shipping problem is .050000, but this figure will be used as the most appropriate estimate of a shipping discrepancy and, as a result, the initiation of a shipping ROD for a bin receipt. Similarly, the probability that a bulk shipment is "perfect" when it arrives at a DLA depot is .960000 (SPD Standard 3272). Therefore, it will be assumed that .040000 represents the relative frequency of a bulk receipt having a shipping discrepancy.

To obtain probabilities for the different types of shipping RODs initiated at a DLA depot, the CDCS data base was screened. The number of each type of shipping ROD (selected by the appropriate discrepancy code) was divided by the total number of shipping RODs to obtain the relative frequencies for each type of ROD. A depot was identified by its RIC. This process was performed for each DLA depot. The average of the proportions of occurrence for a type of ROD (across all depots) represents the probability of that type ROD within this analysis. The results for each depot and the resulting average is given in Table K-1.

The cost of initiating a ROD for a shipping discrepancy (Phase I) is developed in Enclosure 1; the cost for responding to disposition instructions (Phase II) is given in Enclosure 2. Both bin and bulk shipments are addressed. Each type of shipping ROD is also taken into account.

Table K-2 presents, for a bin shipment, the cost of both phases of the ROD process, the total cost for each type of shipping ROD (developed in Enclosures 1 and 2), and the relative frequency and the expected cost of each type. The total expected cost of a shipping ROD is the sum of the expected costs for each type of ROD. Table K-3 displays the same computational scheme for bulk shipments. The expected cost of a bin shipping ROD is $20.29 and the expected cost of a bulk shipping ROD is $26.40. All costs include the inflation factor discussed in the previous appendix.

Table K-1

DISTRIBUTION OF SHIPPING RODS AT DLA DEPOTS

Shipping ROD Type	DLA Depot DDCO	DDMP	DDMT	DDOU	DDRV	DDTC	AVG
Poor Condition and Damage "C"	.195953	.087143	.109032	.158917	.244652	.104288	.149998
Supply "D" Documentation	.194941	.227143	.328723	.100795	.036950	.152462	.173502
Misdirected Shipment "M"	.085329	.032857	.129373	.037816	.142746	.055585	.080618
Wrong Item "W"	.091062	.108571	.070789	.301354	.430183	.143991	.190992
Overage "O"	.099157	.156429	.128560	.052531	.101517	.201165	.123226
Shortage "S"	.333558	.387857	.233523	.348587	.043952	.342509	.281669
TOTAL	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

Table K-2

CALCULATION OF EXPECTED COST

SHIPPING ROD - DLA DEPOT - BIN SHIPMENTS

Shipping ROD Type	Cost (Phase I) Encl 1	Cost (Phase II) Encl 2	Total Cost	Prob of Occur.	Expected Cost
Poor Condition and Damage	$19.64	$17.63	$37.27	.149998	$ 5.59
Supply Documentation	$ 4.31	$ 0.00	$ 4.31	.173502	$ .75
Misdirected Shipment	$19.64	$17.63	$37.27	.080618	$ 3.00
Wrong Item	$19.64	$17.63	$37.27	.190992	$ 7.12
Overage	$19.64	$ 1.63	$21.27	.123226	$ 2.62
Shortage	$ 4.31	$ 0.00	$ 4.31	.281664	$ 1.21
TOTALS				1.00000	$20.29

Table K-3

CALCULATION OF EXPECTED COST

SHIPPING ROD - DLA DEPOT - BULK SHIPMENTS

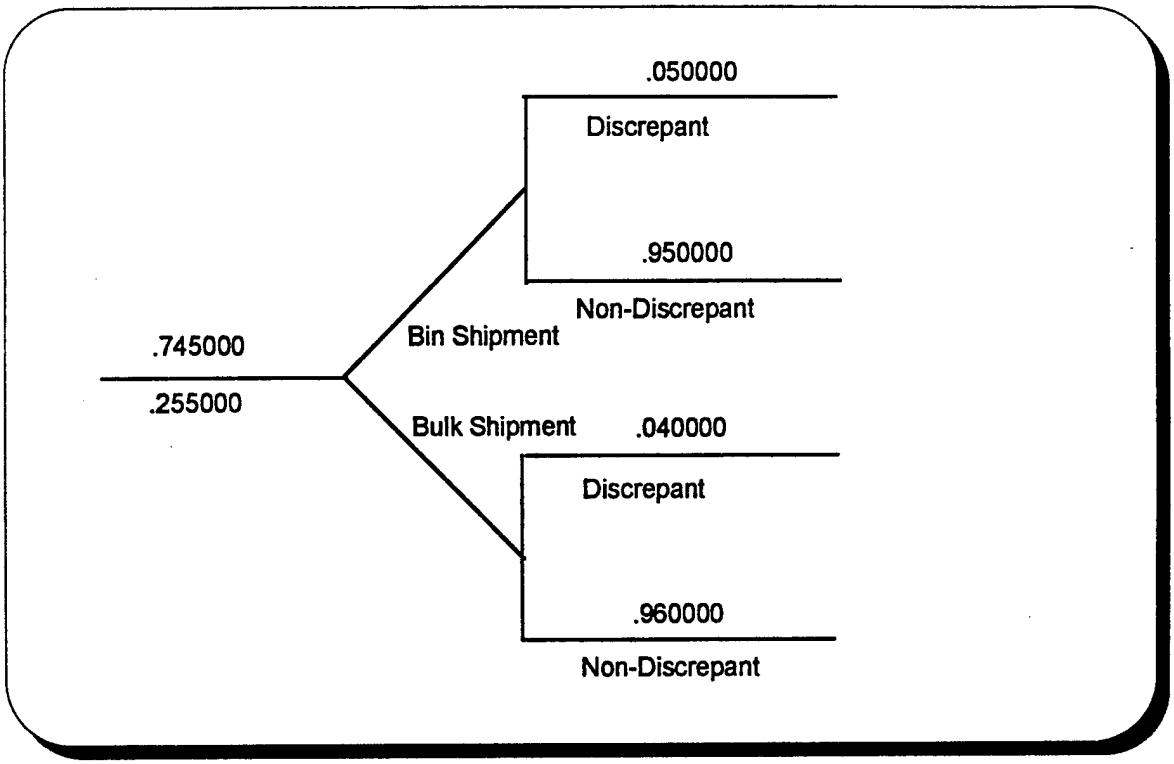
Shipping ROD Type	Cost (Phase I) Encl 1	Cost (Phase II) Encl 2	Total Cost	Prob of Occur.	Expected Cost
Poor Condition and Damage	$25.65	$22.82	$48.47	.149998	$ 7.27
Supply Documentation	$ 5.70	$ 0.00	$ 5.70	.173502	$ 0.99
Misdirected Shipment	$25.65	$22.82	$48.47	.080618	$ 3.91
Wrong Item	$25.65	$22.82	$48.47	.190992	$ 9.26
Overage	$25.65	$ 1.63	$27.28	.123226	$ 3.36
Shortage	$ 5.70	$ 0.00	$ 5.70	.281664	$ 1.61
TOTALS				1.00000	$26.40

The relative frequency of bin versus bulk shipping discrepancies are now developed in a fashion identical to that for packaging RODs. The figure on the next page demonstrates the probabilities gathered up to this point.

Figure K-1

SHIPPING ROD OCCURRENCE PROBABILITIES

(Bin and Bulk)



Using the tree diagram above, necessary probabilities will now be computed.

P (discrepant shipment (shipping problem))

= P (discrepant bin shipment) + P (discrepant bulk shipment)

= P (shipment was bin and was discrepant)

+ P (shipment was bulk and was discrepant)

= P (bin shipment) x P (shipment was discrepant given it was a bin shipment) + P (bulk shipment) x P (shipment was discrepant given it was a bulk shipment)

= (.745000) (.050000) + (.255000) (.040000)
.037250 + .010200

= .047450

The probability of a bin shipment occurrence if the shipment was determined to be discrepant is:

$$\frac{\text{P (shipment was bin and was discrepant)}}{\text{P (shipment was discrepant)}}$$

$$= \frac{.037250}{.047450}$$

$$= .785037$$

The probability of a bulk shipment occurrence if the shipment was determined to be discrepant is:

$$= \frac{\text{P (shipment was bulk and was discrepant)}}{\text{P (shipment was discrepant)}}$$

$$= \frac{.010200}{.047450}$$

$$= .214963$$

Using the costs and probabilities developed thus far, the expected cost of a generic shipping ROD to a DLA depot is:

P (discrepant bin shipment) x (cost of bin shipment shipping ROD)

\+ P (discrepant bulk shipment) x (cost of bulk shipment shipping ROD)

= (.785037) ($20.29) + (.214963) ($26.40)

= $21.61

ENCLOSURE 1 TO APPENDIX K

Phase I - Detecting Discrepancy and Processing ROD

Enclosure 1 to Appendix K

Receipt of Discrepant Item at DLA Depot (Phase I)
Detecting Discrepancy and Processing Shipping ROD

Bin Shipment

	Time Expended		Time x Hourly Pay
Research Documentation & Verify Number and Condition of Boxes	.0980 hours[1]	WG-7[3]	$ 1.29
Inspection of Bin Shipment	.0943 hours[1]	WG-7[3]	$ 1.24
Administrative Actions to Place Item in Suspended Status (All RODs except Shortages and Documentation)	.0542 hours[1]	WG-7[3]	$ .71
Segregate Stocks (All RODs except Shortages and Documentation)	.1015 hours[3]	WG-5[3]	$ 1.19
Surveillance Actions (All RODs except Shortages and Documentation)	.5406 hours[3]	WG-7[3]	$ 7.10
Shortage and Documentation RODs	BASE TOTAL		$ 2.53
	ENHANCED TOTAL		$ 4.31
All Other Shipping RODs	BASE TOTAL		$ 11.53
	ENHANCED TOTAL		$ 19.64

Bulk Shipment

Research Documentation & Verify Number and Condition of Pallets and Boxes	.1206 hours[2]	WG-7[3]	$ 1.58
Inspection of Bulk Shipment	.1350 hours[2]	WG-7[3]	$ 1.77
Administrative Actions to Place Item in Suspended Status (All RODs except Shortages and Documentation)	.0527 hours[2]	WG-7[3]	$ .69
Segregate Stocks (All RODs except Shortages and Documentation)	.3333 hours[3]	WG-5[3]	$ 3.92
Surveillance Actions (All RODs except Shortages and Documentation)	.5406 hours[3]	WG-7[3]	$ 7.10
Shortages and Documentation RODs	BASE TOTAL		$ 3.35
	ENHANCED TOTAL		$ 5.70
All Other Shipping RODs	BASE TOTAL		$ 15.06
	ENHANCED TOTAL		$ 25.65

1 Source of Data: DLA SPD Standard 3271
2 Source of Data: DLA SPD Standard 3272
3 Source of Data: DDRV Information

ENCLOSURE 2 TO APPENDIX K

Phase II - Response to Disposition Instructions

Enclosure 2 to Appendix K

Receipt of Discrepant Item at DLA Depot (Phase II)
Response to Shipping ROD Disposition Instructions

Bin Shipment

	Time Expended		Time x Hourly Pay
Perform Various Administrative Actions in Reaction to Disposition (All RODs except Shortages and Documentation)	.0910 hours[3]	GS-5[3]	$ .96
Retrieve Discrepant Stock (All RODs except Shortages, Overages and Documentation)	.1015 hours[3]	WG-7[3]	$ 1.33
Verify Stock for Shipment and Prepare Pack (All RODs except Shortages, Overages, and Documentation)	.5406 hours[3]	WG-7[3]	$ 7.10
Prepare Material Release Order (MRO) (To Contractor)	.0910 hours[3]	GS-5[3]	$ .96
Overage RODs	BASE TOTAL		$ .96
	ENHANCED TOTAL		$ 1.63
All Other Shipping RODs	BASE TOTAL[4]		$ 10.35
	ENHANCED TOTAL		$ 17.63

Bulk Shipment

Perform Various Administrative Actions in Reaction to Disposition (All RODs except Shortages and Documentation)	.0910 hours[3]	GS-5[3]	$ .96
Retrieve Discrepant Stock (All RODs except Shortages, Overages, and Documentation)	.3333 hours[3]	WG-7[3]	$ 4.38
Verify Stock for Shipment and Prepare Pack (All RODs except Shortages, Overages, and Documentation)	.5406 hours[3]	WG-7[3]	$ 7.10
Prepare Material Release Order (MRO) (To Contractor) (All RODs except Shortages, Overages, and Documentation)	.0910 hours[3]	GS-5[3]	$ .96
Overage RODs	BASE TOTAL		$ .96
	ENHANCED TOTAL		$ 1.63
All Other Shipping RODs	BASE TOTAL[4]		$ 13.40
	ENHANCED TOTAL		$ 22.82

1 Source of Data: DLA SPD Standard 3271
2 Source of Data: DLA SPD Standard 3272
3 Source of Data: DDRV Information
4 Shortage and Documentation RODs do not incur any of these costs.

APPENDIX L

Development of Costs for Center Quality Activities for Packaging RODs

This appendix addresses the various functions performed by the focal point and action point at each supply center. Costs will be assessed for both of these activities for packaging ROD processing and investigation.

The focal point receives a packaging ROD from any one of the four supply levels discussed in this study - ultimate user, retail supply point, service maintenance facility and DLA depot. It then enters ROD data in the CDCS in order for the various supply center activities to access information during the resolution process.

The action point is the element within the center which will become involved with many packaging RODS. It will receive the ROD information from the focal point. The action point - formally referred to as the Quality Assurance Directorate - will solely investigate the ROD, or "pass it" to other activities within the supply center, or forward it to the appropriate Defense Contract Administrative Services (DCMC) Region, or effect any combination of the above actions.

The cost analyses for most supply center organizations, both center quality activities (this appendix) and center support activities (Appendix M), are based on SPD DLA standards. Thus, the functions for any single activity will be the same across all centers. What may be different is the grade of the person performing the activity's actions and, hence, accumulated costs which depend upon wage rates.

In the computations for each activity, the major tasks are identified these tasks are specified in the SPD standards. Enclosures 1 and 2 provide the hour and cost computations for the focal point and action point respectively. The relative frequency or probability is stated for each action. If an event will "always" occur, a probability of "1" is assigned. The probabilities are conditional based on the activity becoming involved in the process. As an example, the probability that a focal point at a DLA supply center "receives" a packaging ROD is 1.00 given that a DLA depot submits a ROD. However, the probability that a DLA depot actually submits a ROD is certainly less than 1.0. The time of duration (in hours) for each task is displayed. The normalized time is the product of the "time of duration" and the probability that this "time of duration" is experienced. The total expected time is calculated by adding the normalized times for individual tasks.

The rank of wage grade of the person performing each task was derived from direct coordination with each supply center. Based on the total expected time for each activity and a grade (and hence an hourly pay rate), the total cost associated with each center activity is calculated - it is the product of the hours and the pay rate. The "inflation" factor, developed in Appendix J and incorporating fatigue, leave, and fringe benefits, was then applied to obtain the enhanced cost.

The focal point costs - by individual supply center - are calculated and presented in Enclosure 1. The action point calculations and total costs are given in Enclosure 2.

Enclosure 1 to Appendix L

Calculation of Focal Point Costs for Packaging RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive ROD via Mail	0.950	.0269	.0255
B	Receive ROD via Telephone	0.050	.6468	.0323
C	Screen ROD	1.000	.0649	.0649
D	Control ROD	1.000	.0517	.0517
E	Delete or Reactivate ROD	0.010	.0176	.0001

Total time for packaging RODs = .0255 + .0323 + .0649 + .0517 + .0001 = .1745

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-07	$13.25	$ 2.31	$ 3.93
DESC	GS-05	$10.69	$ 1.87	$ 3.18
DGSC	GS-04	$ 9.45	$ 1.65	$ 2.81
DISC	GS-04	$ 9.64	$ 1.68	$ 2.86
DPSC(C&T)	GS-09	$16.36	$ 2.85	$ 4.85
DPSC(Med)	GS-04	$ 9.64	$ 1.68	$ 2.86

Source of Data: DLA SPD Standard 4634

ENCLOSURE 2 TO APPENDIX L

Calculation of Action Point Costs

Enclosure 2 to Appendix L

Calculation of Action Point Costs for Packaging RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive Uncontrolled ROD	0.050	.0495	.0025
B	Receive Controlled ROD	0.950	.0065	.0062
C	Review for Completeness	1.000	.0298	.0298
D	Identify and Process ROD	1.000	.0456	.0456
E	Sort RODs by Category	1.000	.0265	.0265
G	Research Technical Data	1.000	.4740	.4740
H	Investigate ROD	1.000	.2804	.2804
J	Prepare Interim Reply	1.000	.2374	.2374
K	Evaluate Results	1.000	.4901	.4901
L	Complete Corrective Actions	1.000	.3181	.3181
M	Initiate Measures to Preclude Reoccurrence	1.000	.0256	.0256
N	Prepare Final Reply	1.000	.3500	.3500

Total time for packaging RODs = .0025 + .0062 + .0298 + .0456 + .0265 + .4740 + .2804
+ .2374 + .4901 + .3181 + .0256 + .3500 = 2.2862

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-11	$19.61	$44.83	$76.34
DESC	GS-11	$19.59	$44.79	$76.28
DGSC	GS-11	$19.37	$44.28	$75.41
DISC	GS-11	$19.79	$45.24	$77.04
DPSC(C&T)	GS-12	$23.72	$54.23	$92.35
DPSC(Med)	GS-12	$23.72	$54.23	$92.35

Source of Data: DLA SPD Standard 4636

APPENDIX M

Development of Costs for Center Support Activities for Packaging RODs

ENCLOSURE 1 TO APPENDIX M

Contracting and Production Directorate

Enclosure 1 to Appendix M

Contracting and Production Directorate for Packaging RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive Action	1.0000	.0933	.0933
B	Obtain Folder	1.0000	.0497	.0497
C	Review and Determine Action (LG)	.1998	.2530	.0505
D	Review and Determine Action (SM)	.6976	.2409	.1681
E	Review and Determine Action (ASP)	.1026	.1874	.0192
F	Prepare Reply and Correspondence	.8112	.1777	.1442
G	Prepare Modification	.1888	.2055	.0388
H	Review Modification	.0726	.1560	.0113
I	Control Modification	.0387	.0808	.0031
J	Forward Modification	.1733	.0081	.0014
K	Prepare System Input	.1050	.0453	.0048

Total time for packaging RODs = .0933 + .0497 + .0505 + .1681 + .0192 + .1442 + .0388 + .0113 + .0031 + .0014 + .0048 = .5844

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-09	$16.21	$ 9.47	$16.13
DESC	GS-09	$16.18	$ 9.46	$16.11
DGSC	GS-09	$16.01	$ 9.36	$15.94
DISC	GS-11	$19.79	$11.57	$19.70
DPSC(C&T)	GS-12	$23.72	$13.86	$23.60
DPSC(Med)	GS-11	$19.79	$11.57	$19.70

Source of Data: DLA SPD Standard 1520

DLA SPD Standards were utilized to derive costs for the Contracting and Production Directorate, the Inventory Accounting Branch (Supply Operations), and the Comptroller Office. Costs developed for an activity will be accumulated in the total ROD processing if that activity plays a part in the resolution of a ROD.

The following enclosures provide the necessary numerical analyses and cost results:

1 - Contracting and Production (C&P) Directorate (SPD Standard 1520)

2 - Inventory Accounting Branch (Supply Operations) (SPD Standard 2201)

3 - Comptroller Office (SPD Standard 7752)

Procedures for calculating activity costs are identical to those already performed for the focal and action points.

ENCLOSURE 2 TO APPENDIX M

Inventory and Accounting Branch (Supply Operations)

Enclosure 2 to Appendix M

Inventory and Accounting Branch (Supply Operations) for Packaging RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive Correspondence	1.000	.0004	.0004
E	Sort Discrepancy (DLA Depot ROD)	0.214	.0192	.0041
F	Sort Discrepancy (Other Activity ROD)	0.786	.0155	.0122
G	Control Discrepancy	1.000	.0007	.0007
H	Sort Necessary Reports	0.075	.0026	.0002
J	Make Distribution	1.000	.0073	.0073
K	Sort Correspondence	1.000	.0079	.0079
N	Process Report	0.075	.0523	.0039
P	Process Asset	1.000	.2671	.2671
Q	Process Discrepancy (DLA Depot ROD)	0.207	.2978	.0616
S	Process Discrepancy (Other Activity ROD)	0.793	.1470	.1166
T	Control Discrepancy	1.000	.0008	.0008
U	Other Administration	0.782	.0133	.0104
V	Follow-Up	1.000	.0085	.0085

Total time for packaging RODs = .0004 + .0041 + .0122 + .0007 + .0002 + .0073 + .0079 + .0039 + .2671 + .0616 + .1166 + .0008 + .0104 + .0085 = .5017

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-06	$11.92	$ 5.98	$10.18
DESC	GS-07	$13.24	$ 6.64	$11.31
DGSC	GS-05	$10.57	$ 5.30	$ 9.03
DISC	GS-07	$13.37	$ 6.71	$11.43
DPSC(C&T)	GS-11	$19.79	$ 9.93	$16.91
DPSC(Med)	GS-05	$10.79	$ 5.41	$ 9.21

Source of Data: DLA SPD Standard 2201

ENCLOSURE 3 TO APPENDIX M

Comptroller Office

Enclosure 3 to Appendix M

Comptroller Office for Packaging RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive and Screen ROD	1.000	.0768	.0768
B	Return Incomplete and Incorrect RODs	0.010	.0709	.0007
C	Input Adjustment	1.000	.0576	.0576
D	Process Inquiry	0.100	.1490	.0149
F	Follow-Up	1.000	.0046	.0046

Total time for packaging RODs = .0768 + .0007 + .0576 + .0149 + .0046 = .1546

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-06	$11.92	$ 1.84	$ 3.13
DESC	GS-06	$11.83	$ 1.83	$ 3.12
DGSC	GS-06	$11.77	$ 1.82	$ 3.10
DISC	GS-06	$11.81	$ 1.83	$ 3.12
DPSC(C&T)	GS-06	$11.81	$ 1.83	$ 3.12
DPSC(Med)	GS-06	$11.81	$ 1.83	$ 3.12

Source of Data: DLA SPD Standard 7752

APPENDIX N

Expected Costs of Supply Center Involvement

for Packaging RODs

Now that the individual activity costs have been assessed, a measure of degree of involvement must now be estimated. The probability that an activity or group of activities are involved is now calculated.

The CDCS database has, for each packaging ROD record, a series of entries in the "action offices" fields. Each action office (not to be confused with action point) is a three-digit field that specifically indicates the division, branch, and in some cases, the individual playing a part in the resolution of a ROD. The first digit of this field is considered. This digit in the vast majority of cases will be a "Q" (indicating the Quality Assurance Office), "P" (Contracting and Production Division), "O" (Supply Operations Directorate), or "C" (Comptroller Office). One, two, three, or all four of these center activities may be involved with the processing of a ROD. For example, a string of "Q P C P Q C" demonstrates that the Quality Assurance Office was the first activity to act on the ROD. It then passed the ROD to the Contracting and Production Division. From there, the ROD traveled to the Comptroller, back to C & P, then to Quality, and finally to the Comptroller. For the purpose of this study, the appearance of an activity in a string of action offices will reflect that this activity performed all functions and accumulated all costs that were calculated in Appendices L and M. The order of appearance makes no difference; the number of times an activities appears also is not significant. Thus, the example above reduces to "QPC" for the computations.

For four separate activities ("Q," "P," "O," & "C"), a total of 15 combinations arise. A tally is made for each of these combinations from the CDCS database for each center. This tally is then divided by the total number of packaging RODs considered to develop a probability distribution. A total cost is calculated for each of the 15 scenarios based on the costs calculated in the previous appendices. Each scenario total cost is multiplied by its probability of occurrence to obtain the expected cost of that particular set of processing activities. The sum of all individual expected costs is then calculated. Since the focal point is always involved, the focal point cost is then added to this last expected cost. The final result is the expected cost of all center quality and support activities, or more simply, the total cost of a center's involvement.

Results are given in the following summary center table. Individual computations are given in attached tabular formats.

Table N-1

EXPECTED CENTER COSTS
FOR PACKAGING RODS

Center	Table	Expected Cost
DCSC	N-2	$45.95
DESC	N-3	$37.57
DGSC	N-4	$90.67
DISC	N-5	$29.38
DPSC(C&T)	N-6	$97.20
DPSC(Med)	N-7	$31.61

TABLE N-2
DEFENSE CONSTRUCTION SUPPLY CENTER
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	18	0.123	76.34				$76.34	$9.39
P	17	0.116		16.13			$16.13	$1.87
O	0	0.000			10.18		$10.18	$0.00
C	0	0.000				3.13	$3.13	$0.00
QP	7	0.048	76.34	16.13			$92.47	$4.44
QO	4	0.027	76.34		10.18		$86.52	$2.34
QC	2	0.014	76.34			3.13	$79.47	$1.11
PO	87	0.596		16.13	10.18		$26.31	$15.68
PC	0	0.000		16.13		3.13	$19.26	$0.00
OC	0	0.000			10.18	3.13	$13.31	$0.00
QPO	10	0.068	76.34	16.13	10.18		$102.65	$6.98
QPC	0	0.000	76.34	16.13		3.13	$95.60	$0.00
QOC	0	0.000	76.34		10.18	3.13	$89.65	$0.00
POC	1	0.007		16.13	10.18	3.13	$29.44	$0.21
QPOC	0	0.000	76.34	16.13	10.18	3.13	$105.78	$0.00
TOTAL	146	1.000						$42.02

The focal point, as the initial processor of packaging RODs, accumulates a cost of $3.93 at DCSC. This cost was developed in Appendix L. The cost of all DCSC activities involved is $3.93 + $42.02 = $45.95.

TABLE N-3
DEFENSE ELECTRONIC SUPPLY CENTER
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	0	0.000	76.28				$76.28	$0.00
P	76	0.068		16.11			$16.11	$1.10
O	335	0.298			11.31		$11.31	$3.37
C	0	0.000				3.12	$3.12	$0.00
QP	1	0.001	76.28	16.11			$92.39	$0.09
QO	93	0.083	76.28		11.31		$87.59	$7.27
QC	0	0.000	76.28			3.12	$79.40	$0.00
PO	491	0.437		16.11	11.31		$27.42	$11.98
PC	0	0.000		16.11		3.12	$19.23	$0.00
OC	12	0.011			11.31	3.12	$14.43	$0.16
QPO	101	0.090	76.28	16.11	11.31		$103.70	$9.33
QPC	0	0.000	76.28	16.11		3.12	$95.51	$0.00
QOC	14	0.012	76.28		11.31	3.12	$90.71	$1.09
POC	0	0.000		16.11	11.31	3.12	$30.54	$0.00
QPOC	0	0.000	76.28	16.11	11.31	3.12	$106.82	$0.00
TOTAL	1123	1.000						$34.39

The focal point, as the initial processor of packaging RODs, accumulates a cost of $3.18 at DESC. This cost was developed in Appendix L. The cost of all DESC activities involved is $3.18 + $34.39 = $37.57.

TABLE N-4
DEFENSE GENERAL SUPPLY CENTER
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	130	0.028	75.41				$75.41	$2.11
P	301	0.065		15.94			$15.94	$1.04
O	53	0.011			9.03		$9.03	$0.10
C	0	0.000				3.10	$3.10	$0.00
QP	2279	0.490	75.41	15.94			$91.35	$44.76
QO	61	0.013	75.41		9.03		$84.44	$1.10
QC	1	0.001	75.41			3.10	$78.51	$0.08
PO	46	0.009		15.94	9.03		$24.97	$0.22
PC	1	0.001		15.94		3.10	$19.04	$0.02
OC	0	0.000			9.03	3.10	$12.13	$0.00
QPO	1760	0.379	75.41	15.94	9.03		$100.38	$38.04
QPC	2	0.001	75.41	15.94		3.10	$94.45	$0.09
QOC	1	0.001	75.41		9.03	3.10	$87.54	$0.09
POC	0	0.000		15.94	9.03	3.10	$28.07	$0.00
QPOC	13	0.002	75.41	15.94	9.03	3.10	$103.48	$0.21
TOTAL	4648	1.000						$87.86

The focal point, as the initial processor of packaging RODs, accumulates a cost of $2.81 at DGSC. This cost was developed in Appendix L. The cost of all DGSC activities involved is $2.81 + $87.86 = $90.67.

TABLE N-5
DEFENSE INDUSTRIAL SUPPLY CENTER
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	8	0.010	77.04				$77.04	$0.77
P	347	0.437		19.70			$19.70	$8.61
O	143	0.180			11.43		$11.43	$2.06
C	0	0.000				3.12	$3.12	$0.00
QP	0	0.000	77.04	19.70			$96.74	$0.00
QO	14	0.018	77.04		11.43		$88.47	$1.59
QC	3	0.004	77.04			3.12	$80.16	$0.32
PO	250	0.315		19.70	11.43		$31.13	$9.81
PC	1	0.001		19.70		3.12	$22.82	$0.02
OC	3	0.004			11.43	3.12	$14.55	$0.06
QPO	23	0.029	77.04	19.70	11.43		$108.17	$3.14
QPC	0	0.000	77.04	19.70		3.12	$99.86	$0.00
QOC	0	0.000	77.04		11.43	3.12	$91.59	$0.00
POC	1	0.001		19.70	11.43	3.12	$34.25	$0.03
QPOC	1	0.001	77.04	19.70	11.43	3.12	$111.29	$0.11
TOTAL	794	1.000						$26.52

The focal point, as the initial processor of packaging RODs, accumulates a cost of $2.86 at DISC. This cost was developed in Appendix L. The cost of all DISC activities involved is $2.86 + $26.52 = $29.38.

TABLE N-6
DEFENSE PERSONNEL SUPPORT CENTER - CLOTHING & TEXTILE
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	241	1.000	92.35				$92.35	$92.35
P	0	0.000		23.60			$23.60	$0.00
O	0	0.000			16.91		$16.91	$0.00
C	0	0.000				3.12	$3.12	$0.00
QP	0	0.000	92.35	23.60			$115.95	$0.00
QO	0	0.000	92.35		16.91		$109.26	$0.00
QC	0	0.000	92.35			3.12	$95.47	$0.00
PO	0	0.000		23.60	16.91		$40.51	$0.00
PC	0	0.000		23.60		3.12	$26.72	$0.00
OC	0	0.000			16.91	3.12	$20.03	$0.00
QPO	0	0.000	92.35	23.60	16.91		$132.86	$0.00
QPC	0	0.000	92.35	23.60		3.12	$119.07	$0.00
QOC	0	0.000	92.35		16.91	3.12	$112.38	$0.00
POC	0	0.000		23.60	16.91	3.12	$43.63	$0.00
QPOC	0	0.000	92.35	23.60	16.91	3.12	$135.98	$0.00
TOTAL	241	1.000						$92.35

The focal point, as the initial processor of packaging RODs, accumulates a cost of $4.85 at DPSC(C&T). This cost was developed in Appendix L. The cost of all DPSC(C&T) activities involved is $4.85 + $92.35 = $97.20.

TABLE N-7
DEFENSE PERSONNEL SUPPORT CENTER - MEDICAL
PACKAGING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	0	0.000	92.35				$92.35	$0.00
P	6	0.009		19.70			$19.70	$0.18
O	13	0.019			9.21		$9.21	$0.17
C	0	0.000				3.12	$3.12	$0.00
QP	0	0.000	92.35	19.70			$112.05	$0.00
QO	2	0.003	92.35		9.21		$101.56	$0.30
QC	0	0.000	92.35			3.12	$95.47	$0.00
PO	649	0.946		19.70	9.21		$28.91	$27.35
PC	2	0.003		19.70		3.12	$22.82	$0.07
OC	1	0.001			9.21	3.12	$12.33	$0.01
QPO	1	0.001	92.35	19.70	9.21		$121.26	$0.12
QPC	0	0.000	92.35	19.70		3.12	$115.17	$0.00
QOC	0	0.000	92.35		9.21	3.12	$104.68	$0.00
POC	12	0.017		19.70	9.21	3.12	$32.03	$0.54
QPOC	0	0.000	92.35	19.70	9.21	3.12	$124.38	$0.00
TOTAL	686	1.000						$28.75

The focal point, as the initial processor of packaging RODs, accumulates a cost of $2.86 at DPSC(Med). This cost was developed in Appendix L. The cost of all DPSC(Med) activities involved is $2.86 + $28.75 = $31.61.

APPENDIX O

Development Costs for Center Quality Activities for Shipping RODs

Enclosure 1 to Appendix O

Calculation of Focal Point Costs for Shipping RODs

Element	Major Task	Applicable ROD Type	Relative Frequency	Time of Duration	Normalized Time
A	Receive ROD via Mail	All Shipping RODs	0.950	.0269	.0256
B	Receive ROD via Telephone or Damage RODs	Poor Condition	0.050	.6468	.0323
C	Screen ROD	All Shipping RODs	1.000	.0649	.0649
D	Control ROD	All Shipping RODs	1.000	.0517	.0517
E	Delete or Reactivate ROD	All Shipping RODs	0.010	.0176	.0002

Total time for poor condition/damage RODs = .0256 + .0323 + .0649 + .0517 + .0002 = .1747
Total time for shipping RODs = .0256 + .0649 + .0517 + .0002 = .1424

Center	Grade	Hourly Rate	Poor Condition/ Damage RODs Base Cost	Poor Condition/ Damage RODs Enhanced Cost	All Other Shipping RODs Base Cost	All Other Shipping RODs Enhanced Cost
DCSC	GS-07	$13.25	$ 2.31	$ 3.93	$ 1.89	$ 3.22
DESC	GS-05	$10.69	$ 1.87	$ 3.18	$ 1.52	$ 2.59
DGSC	GS-04	$ 9.45	$ 1.65	$ 2.81	$ 1.35	$ 2.30
DISC	GS-04	$ 9.64	$ 1.68	$ 2.86	$ 1.37	$ 2.33
DPSC(C&T)	GS-09	$16.36	$ 2.86	$ 4.87	$ 2.33	$ 3.97
DPSC(Med)	GS-04	$ 9.64	$ 1.68	$ 2.86	$ 1.37	$ 2.33

Source of Data: DLA SPD Standard 4634

The calculation of shipping ROD costs for the center quality activities - the focal point and the action point - follows the pattern as that made for packaging RODs. However, since there are different types of shipping RODs, some additional computations must be made. There is a slight difference in expended man-hours - and therefore costs - for shipping RODs initiated for poor condition or damage shipments. All other types of shipping RODs (supply documentation, misdirected shipments, wrong item received, overage and shortage) accumulate the same total cost for all center activities.

The first step of gathering a total for each type of shipping ROD is accomplished by Enclosure 1 for the focal point. The same set of calculations is made for the action point in Enclosure 2.

To acquire an average cost for a generic shipping ROD, the relative frequency of damage RODs to other RODs was combined with the total costs for these two groups. The probability associated with a damage ROD was derived by dividing the tally of damage RODs to the total number of shipping RODs considered. Both tallies were extracted from the CDCS. The table below highlights the calculations and produces the average total cost of a shipping ROD to each center's focal point.

Table 0-1

CALCULATION OF FOCAL POINT COST

Center	Damage ROD Cost (Encl 1)	Probability Damage ROD	Expected Cost Damage ROD	Other ROD Cost (Encl 1)	Probability	Expected Cost	Total Cost
DCSC	$3.93	.2109	$0.83	$3.22	.7891	$2.54	$3.37
DESC	$3.18	.1636	$0.52	$2.59	.8364	$2.17	$2.69
DGSC	$2.81	.1036	$0.29	$2.30	.8964	$2.06	$2.35
DISC	$2.86	.0383	$0.11	$2.33	.9617	$2.24	$2.35
DTSC	$4.87	.0633	$0.31	$3.97	.9367	$3.72	$4.03
DMSC	$2.86	.1187	$0.34	$2.33	.8813	$2.05	$2.39

The next table performs similar cost calculations for action points at each of the centers. Again, damage RODs are slightly more costly than the other types of shipping RODs.

ENCLOSURE 2 TO APPENDIX O

Calculation of Action Point Costs

Enclosure 2 to Appendix O

Calculation of Action Point Costs for Shipping RODs

Element	Major Task	Applicable ROD Type	Relative Frequency	Time of Duration	Normalized Time
A	Receive Uncontrolled ROD	All Shipping RODs	0.050	.0495	.0025
B	Receive Controlled ROD	All Shipping RODs	0.950	.0065	.0062
C	Review for Completeness	All Shipping RODs	1.000	.0298	.0298
D	Identify and Process ROD	All Shipping RODs	1.000	.0456	.0456
E	Sort RODs by Category	All Shipping RODs	1.000	.0265	.0265
G	Research Technical Data	All Shipping RODs	1.000	.1564	.1564
	Additional Research	Poor Condition or Damage RODs	1.000	.3176	.3176
H	Investigate ROD	All Shipping RODs	1.000	.2804	.2804
J	Prepare Interim Reply	All Shipping RODs	1.000	.2374	.2374
K	Evaluate Results	All Shipping RODs	1.000	.4901	.4901
L	Complete Corrective Actions on ROD	All Shipping RODs	1.000	.3181	.3181
M	Initiate Measures to Preclude Reoccurrence	All Shipping RODs	1.000	.0226	.0226
	Additional Measures	Poor Condition or Damage RODs	1.000	.0030	.0030
N	Prepare Final Reply	All Shipping RODs	1.000	.3500	.3500

Total time for poor condition/damage RODs = .0025 + .0062 + .0298 + .0456 + .0265 + .1564 + .3176 + .2804 + .2374 + .4901 + .3181 + .0226 + .0030 + .3500 = 2.2862

Total time for all other shipping RODs = .0025 + .0062 + .0298 + .0456 + .0265 + .1564 + .2804 + .2374 + .4901 + .3181 + .0226 + .3500 = 1.9656

			Poor Condition/ Damage RODs		All Other Shipping RODs	
Center	Grade	Hourly Rate	Base Cost	Enhanced Cost	Base Cost	Enhanced Cost
DCSC	GS-11	$19.61	$44.83	$76.34	$38.55	$65.65
DESC	GS-11	$19.59	$44.79	$76.28	$38.51	$65.58
DGSC	GS-11	$19.37	$44.28	$75.41	$38.07	$64.83
DISC	GS-11	$19.79	$45.24	$77.04	$38.90	$66.25
DPSC(C&T)	GS-12	$23.72	$54.23	$92.35	$46.62	$79.39
DPSC(Med)	GS-12	$23.72	$54.23	$92.35	$46.62	$79.39

Source of Data: DLA SPD Standard 4636

Table O-2

CALCULATION OF ACTION POINT COST

Center	Damage ROD Cost (Encl 2)	Probability Damage ROD	Expected Cost Damage ROD	Other ROD Cost (Encl 2)	Probability	Expected Cost	Total Cost
DCSC	$76.34	.2109	$16.10	$65.65	.7891	$51.80	$67.90
DESC	$76.28	.1636	$12.48	$65.58	.8364	$54.85	$67.33
DGSC	$75.41	.1036	$ 7.81	$64.83	.8964	$58.11	$65.92
DISC	$77.04	.0383	$ 2.95	$66.25	.9617	$63.71	$66.66
DTSC	$92.35	.0633	$ 5.85	$79.39	.9367	$74.36	$80.21
DMSC	$92.35	.1187	$10.96	$79.39	.8813	$69.97	$80.93

APPENDIX P

Development of Costs for Center Support Activities for Shipping RODs

DLA SPD Standards were utilized to derive costs for the Contracting and Production Directorate, the Inventory Accounting Branch (Supply Operations), and the Comptroller Office. Costs developed for an activity will be accumulated in the total ROD processing cost if that activity plays a part in the resolution of a ROD.

The following enclosures provide the necessary numerical analyses and cost results:

1 - Contracting and Production (C&P) Directorate (SPD Standard 1520)
2 - Inventory Accounting Branch (Supply Operations) (SPD Standard 2201)
3 - Comptroller Office (SPD Standard 7752)

Procedures for calculating activity costs are identical to those performed for packaging RODs. However, shipping ROD costs differ within the C&P Directorate with respect to RODs submitted for damage and poor condition receipts versus other shipping ROD types. To acquire an average shipping ROD cost, an analysis similar to that performed for the focal and action points in Appendix O is performed. Probabilities were developed from the CDCS data base. The calculations are contained in the table below.

Table P-1

CALCULATION OF C&P COST

Center	Damage ROD Cost (Encl 1)	Probability Damage ROD	Expected Cost Damage ROD	Other ROD Cost (Encl 1)	Probability	Expected Cost	Total Cost
DCSC	$16.13	.2109	$3.40	$14.63	.7891	$11.55	$14.95
DESC	$16.11	.1636	$2.64	$14.59	.8364	$12.20	$14.84
DGSC	$15.94	.1036	$1.65	$14.44	.8964	$12.94	$14.59
DISC	$19.70	.0383	$0.75	$17.85	.9617	$17.17	$17.92
DTSC	$23.60	.0633	$1.49	$21.41	.9367	$20.05	$21.54
DMSC	$19.70	.1187	$2.34	$17.85	.8813	$15.73	$18.07

ENCLOSURE 1 TO APPENDIX P

Contracting and Production Directorate

Enclosure 1 to Appendix P

Contracting and Production Directorate for Shipping RODs

Element	Major Task	Applicable ROD Type	Relative Frequency	Time of Duration	Normalized Time
A	Receive Action	All Shipping RODs	1.000	.0933	.0933
B	Obtain Folder	All Shipping RODs	0.990	.0497	.0497
C	Review and Determine Action (LG)	All Shipping RODs	0.062	.2530	.0505
D	Review and Determine Action (SM)	All Shipping RODs	0.620	.2409	.1681
E	Review and Determine Action (ASP)	All Shipping RODs	0.318	.1874	.0192
F	Prepare Reply and Correspondence	All Shipping RODs	0.797	.1777	.1442
G	Prepare Modification	Poor Condition or Damage RODs	0.203	.2055	.0388
H	Review Modification	Poor Condition or Damage RODs	0.072	.1560	.0113
I	Control Modification	Poor Condition or Damage RODs	0.077	.0808	.0031
J	Forward Modification	Poor Condition or Damage RODs	0.135	.0081	.0014
K	Prepare System Input	All Shipping RODs	0.105	.0453	.0048

Total time for poor condition/damage RODs = .0933 + .0497 + .0505 + .1681 + .0192 + .1442 + .0388 + .0113 + .0031 + .0014 + .0048 = .5844

Total time for all other shipping RODs = .0933 + .0497 + .0505 + .1681 + .0192 + .1442 + .0048 = .5298

Center	Grade	Hourly Rate	Poor Condition/ Damage RODs Base Cost	Poor Condition/ Damage RODs Enhanced Cost	All Other Shipping RODs Base Cost	All Other Shipping RODs Enhanced Cost
DCSC	GS-09	$16.21	$ 9.47	$16.13	$ 8.59	$14.63
DESC	GS-09	$16.18	$ 9.46	$16.11	$ 8.57	$14.59
DGSC	GS-09	$16.01	$ 9.36	$15.94	$ 8.48	$14.44
DISC	GS-11	$19.79	$11.57	$19.70	$10.48	$17.85
DPSC(C&T)	GS-12	$23.72	$13.86	$23.60	$12.57	$21.41
DPSC(Med)	GS-11	$19.79	$11.57	$19.70	$10.48	$17.85

Source of Data: DLA SPD Standard 1520

ENCLOSURE 2 TO APPENDIX P

Inventory and Accounting Branch (Supply Operations)

Enclosure 2 to Appendix P

Inventory and Accounting Branch (Supply Operations) for Shipping RODs

Element	Major Task	Applicable ROD Type	Relative Frequency	Time of Duration	Normalized Time
A	Receive Correspondence	All Shipping RODs	1.000	.0004	.0004
E	Sort Discrepancy	ROD Initiated by DLA Depot	0.214	.0192	.0041
F	Sort Discrepancy	ROD Initiated by Other Activity	0.786	.0155	.0122
G	Control Discrepancy	All Shipping RODs	1.000	.0007	.0007
H	Sort Necessary Reports	All Shipping RODs	0.075	.0026	.0002
J	Make Distribution	All Shipping RODs	1.000	.0073	.0073
K	Sort Correspondence	All Shipping RODs	1.000	.0079	.0079
N	Process Report	All Shipping RODs	0.075	.0523	.0039
Q	Process Discrepancy	ROD Initiated by DLA Depot	0.207	.2978	.0616
S	Process Discrepancy	ROD Initiated by Other Activity	0.793	.1470	.1166
T	Control Discrepancy	All Shipping RODs	1.000	.0008	.0008
U	Other Administration	All Shipping RODs	0.782	.0133	.0104
V	Follow-Up	All Shipping RODs	1.000	.0085	.0085

Total time for shipping RODs = .0004 + .0041 + .0122 + .0007 + .0002 + .0073 + .0079 + .0039 + .0616 + .1166 + .0008 + .0104 + .0085 = .2346

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-06	$11.92	$ 2.80	$ 4.77
DESC	GS-07	$13.24	$ 3.11	$ 5.30
DGSC	GS-05	$10.57	$ 2.48	$ 4.22
DISC	GS-07	$13.37	$ 3.14	$ 5.35
DPSC(C&T)	GS-11	$19.79	$ 4.64	$ 7.90
DPSC(Med)	GS-05	$10.79	$ 2.53	$ 4.31

Source of Data: DLA SPD Standard 2201

ENCLOSURE 3 TO APPENDIX P

Comptroller Office

Enclosure 3 to Appendix P

Comptroller Office for Shipping RODs

Element	Major Task	Relative Frequency	Time of Duration	Normalized Time
A	Receive and Screen ROD	1.000	.0768	.0768
B	Return Incomplete and Incorrect RODs	0.010	.0709	.0007
C	Input Adjustment	1.000	.0576	.0576
D	Process Inquiry	0.100	.1490	.0149
F	Follow-Up	1.000	.0046	.0046

Total time for shipping RODs = .0768 + .0007 + .0576 + .0149 + .0046 = .1546

Center	Grade	Hourly Rate	Base Cost	Enhanced Cost
DCSC	GS-06	$11.92	$ 1.84	$ 3.13
DESC	GS-06	$11.83	$ 1.83	$ 3.12
DGSC	GS-06	$11.77	$ 1.82	$ 3.10
DISC	GS-06	$11.81	$ 1.83	$ 3.12
DPSC(C&T)	GS-06	$11.81	$ 1.83	$ 3.12
DPSC(Med)	GS-06	$11.81	$ 1.83	$ 3.12

Source of Data: DLA SPD Standard 7752

APPENDIX Q

Expected Cost of Supply Center Involvement for Shipping RODs

A full explanation of the procedures to determine the expected cost of each supply center's involvement for ROD processing is given in Appendix N (for packaging RODs). Results for center shipping ROD costs are given in the following table. Calculations are provided in tables on the following pages - one table for each center.

Table Q-1

EXPECTED CENTER COST FOR SHIPPING RODS

Center	Table	Expected Cost
DCSC	Q-2	$53.41
DESC	Q-3	$53.63
DGSC	Q-4	$28.27
DISC	Q-5	$27.42
DPSC (C&T)	Q-6	$84.24
DPSC (Med)	Q-7	$26.04

TABLE Q-2
DEFENSE CONSTRUCTION SUPPLY CENTER
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	17	0.021	67.90				$67.90	$1.43
P	118	0.147		14.95			$14.95	$2.20
O	0	0.000			4.77		$4.77	$0.00
C	1	0.001				3.13	$3.13	$0.00
QP	10	0.012	67.90	14.95			$82.85	$0.99
QO	35	0.043	67.90		4.77		$72.67	$3.12
QC	123	0.153	67.90			3.13	$71.03	$10.87
PO	241	0.299		14.95	4.77		$19.72	$5.90
PC	27	0.034		14.95		3.13	$18.08	$0.61
OC	1	0.001			4.77	3.13	$7.90	$0.01
QPO	204	0.253	67.90	14.95	4.77		$87.62	$22.17
QPC	13	0.016	67.90	14.95		3.13	$85.98	$1.38
QOC	7	0.009	67.90		4.77	3.13	$75.80	$0.68
POC	2	0.002		14.95	4.77	3.13	$22.85	$0.05
QPOC	6	0.007	67.90	14.95	4.77	3.13	$90.75	$0.64
TOTAL	805	1.000						$50.04

The focal point, as the initial processor of shipping RODs, accumulates a cost of $3.37 at DCSC. This cost was developed in Appendix O. The cost of all DCSC activities involved is $3.37 + $50.04 = $53.41.

TABLE Q-3
DEFENSE ELECTRONIC SUPPLY CENTER
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	9	0.004	67.33				$67.33	$0.27
P	8	0.004		14.84			$14.84	$0.06
O	4	0.002			5.30		$5.30	$0.01
C	0	0.000				3.12	$3.12	$0.00
QP	6	0.003	67.33	14.84			$82.17	$0.25
QO	249	0.113	67.33		5.30		$72.63	$8.21
QC	2	0.001	67.33			3.12	$70.45	$0.07
PO	1015	0.460		14.84	5.30		$20.14	$9.26
PC	0	0.000		14.84		3.12	$17.96	$0.00
OC	1	0.001			5.30	3.12	$8.42	$0.01
QPO	623	0.283	67.33	14.84	5.30		$87.47	$24.75
QPC	0	0.000	67.33	14.84		3.12	$85.29	$0.00
QOC	194	0.088	67.33		5.30	3.12	$75.75	$6.67
POC	80	0.036		14.84	5.30	3.12	$23.26	$0.84
QPOC	14	0.006	67.33	14.84	5.30	3.12	$90.59	$0.54
TOTAL	2205	1.000						$50.94

The focal point, as the initial processor of shipping RODs, accumulates a cost of $2.69 at DESC. This cost was developed in Appendix O. The cost of all DESC activities involved is $2.69 + $50.94 = $53.63.

TABLE Q-4
DEFENSE GENERAL SUPPLY CENTER
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	24	0.010	65.92				$65.92	$0.66
P	1045	0.424		14.59			$14.59	$6.19
O	20	0.008			4.22		$4.22	$0.03
C	0	0.000				3.10	$3.10	$0.00
QP	27	0.011	65.92	14.59			$80.51	$0.89
QO	47	0.019	65.92		4.22		$70.14	$1.33
QC	0	0.000	65.92			3.10	$69.02	$0.00
PO	937	0.380		14.59	4.22		$18.81	$7.15
PC	83	0.034		14.59		3.10	$17.69	$0.60
OC	0	0.000			4.22	3.10	$7.32	$0.00
QPO	247	0.100	65.92	14.59	4.22		$84.73	$8.47
QPC	0	0.000	65.92	14.59		3.10	$83.61	$0.00
QOC	9	0.004	65.92		4.22	3.10	$73.24	$0.29
POC	25	0.010		14.59	4.22	3.10	$21.91	$0.22
QPOC	2	0.001	65.92	14.59	4.22	3.10	$87.83	$0.09
TOTAL	2466	1.000						$25.92

The focal point, as the initial processor of shipping RODs, accumulates a cost of $2.35 at DGSC. This cost was developed in Appendix O. The cost of all DGSC activities involved is $2.35 + $25.92 = $28.27.

TABLE Q-5
DEFENSE INDUSTRIAL SUPPLY CENTER
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	29	0.005	66.66				$66.66	$0.33
P	751	0.131		17.92			$17.92	$2.35
O	1333	0.232			5.35		$5.35	$1.24
C	0	0.000				3.12	$3.12	$0.00
QP	5	0.001	66.66	17.92			$84.58	$0.08
QO	265	0.046	66.66		5.35		$72.01	$3.31
QC	73	0.013	66.66			3.12	$69.78	$0.91
PO	2944	0.512		17.92	5.35		$23.27	$11.91
PC	0	0.000		17.92		3.12	$21.04	$0.00
OC	7	0.001			5.35	3.12	$8.47	$0.01
QPO	251	0.044	66.66	17.92	5.35		$89.93	$3.96
QPC	1	0.001	66.66	17.92		3.12	$87.70	$0.09
QOC	54	0.009	66.66		5.35	3.12	$75.13	$0.68
POC	24	0.004		17.92	5.35	3.12	$26.39	$0.11
QPOC	8	0.001	66.66	17.92	5.35	3.12	$93.05	$0.09
TOTAL	5745	1.000						$25.07

The focal point, as the initial processor of shipping RODs, accumulates a cost of $2.35 at DISC. This cost was developed in Appendix O. The cost of all DISC activities involved is $2.35 + $25.07 = $27.42.

TABLE Q-6
DEFENSE PERSONNEL SUPPORT CENTER - CLOTHING & TEXTILE
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	16	1.000	80.21				$80.21	$80.21
P	0	0.000		21.54			$21.54	$0.00
O	0	0.000			7.9		$7.90	$0.00
C	0	0.000				3.12	$3.12	$0.00
QP	0	0.000	80.21	21.54			$101.75	$0.00
QO	0	0.000	80.21		7.9		$88.11	$0.00
QC	0	0.000	80.21			3.12	$83.33	$0.00
PO	0	0.000		21.54	7.9		$29.44	$0.00
PC	0	0.000		21.54		3.12	$24.66	$0.00
OC	0	0.000			7.9	3.12	$11.02	$0.00
QPO	0	0.000	80.21	21.54	7.9		$109.65	$0.00
QPC	0	0.000	80.21	21.54		3.12	$104.87	$0.00
QOC	0	0.000	80.21		7.9	3.12	$91.23	$0.00
POC	0	0.000		21.54	7.9	3.12	$32.56	$0.00
QPOC	0	0.000	80.21	21.54	7.9	3.12	$112.77	$0.00
TOTAL	16	1.000						$80.21

The focal point, as the initial processor of shipping RODs, accumulates a cost of $4.03 at DPSC(C&T). This cost was developed in Appendix O. The cost of all DPSC(C&T) activities involved is $4.03 + $80.21 = $84.24.

TABLE Q-7
DEFENSE PERSONNEL SUPPORT CENTER - MEDICAL
SHIPPING RODS

RESOLUTION PARTICIPANTS	NO. OF RODS	PROB.	ACTIVITY COSTS Q	P	O	C	TOTAL COST	EXPECTED COST
Q	1	0.001	80.93				$80.93	$0.08
P	60	0.040		18.07			$18.07	$0.72
O	21	0.014			4.31		$4.31	$0.06
C	0	0.000				3.12	$3.12	$0.00
QP	6	0.004	80.93	18.07			$99.00	$0.40
QO	3	0.002	80.93		4.31		$85.24	$0.17
QC	0	0.000	80.93			3.12	$84.05	$0.00
PO	997	0.661		18.07	4.31		$22.38	$14.79
PC	42	0.028		18.07		3.12	$21.19	$0.59
OC	16	0.011			4.31	3.12	$7.43	$0.08
QPO	10	0.007	80.93	18.07	4.31		$103.31	$0.72
QPC	0	0.000	80.93	18.07		3.12	$102.12	$0.00
QOC	2	0.001	80.93		4.31	3.12	$88.36	$0.09
POC	349	0.231		18.07	4.31	3.12	$25.50	$5.89
QPOC	1	0.001	80.93	18.07	4.31	3.12	$106.43	$0.11
TOTAL	1508	1.000						$23.71

The focal point, as the initial processor of shipping RODs, accumulates a cost of $2.33 at DPSC(Med). This cost was developed in Appendix O. The cost of all DPSC(Med) activities involved is $2.33 + $23.71 = $26.04.

APPENDIX R

Development of Costs for

Defense Contract Management Command (DCMC)

Activities for Packaging RODs

If a ROD is passed from a DLA supply center to a specific DCMC, three activities may become involved with its resolution. The primary personnel acting on a ROD are the discrepancy monitor (located within a management command or a plant), the Quality Assurance Representative (QAR), and the Administrative Contracting Officer (ACO).

The monitor receives the ROD, enters information into the necessary automated systems, completes the necessary administration, forwards the ROD to the QAR (if investigation is required), and produces periodic reports until the ROD is completely resolved. The average cost of all monitoring activities at the DCMC level is now $348.14. This cost represents the total of all efforts performed by monitors for a single transaction.

The QAR is the primary resolution force within DCMC. This individual jointly investigates the cause of the ROD with the contractor and generates the necessary corrective actions. The cost estimation for QAR involvement was performed in great detail in Project 81012. Utilizing the Quality Assurance Management Information System (QA MIS) data bases, the times devoted to the resolution of quality complaints were captured. These times would also apply to packaging ROD investigation and resolution. Based on individual times - calculated for both resident and nonresident QARs - separate costs were developed for each DLA-managed item. These costs are carried forward to this present analysis and are displayed in the "Total QAR Cost" column within Enclosure 1 to this Appendix.

If a ROD is passed from a supply center to DCMC, the QAR does not always become involved in investigative processes. The ROD may simply be used for general management, statistical analysis, or simply "for information only." In these cases, the monitor becomes involved - the QAR does not. The measure of QAR involvement is captured in this analysis.

To establish probabilities for DCMC involvement, RODs experts were interviewed by telephone at each supply center. These experts reviewed their past records to determine the percentage of RODs passed to DCMC for resolution.

Table R-1

DCMC INVOLVEMENT PROBABILITIES

Center	Prob. of DCMC Involvement
DCSC	.010
DESC	.010
DGSC	.004
DISC	.005
DPSC (C&T)	.005
DPSC (Med)	.010

To assess the degree to which the QAR actually investigates a ROD, the Product Quality Deficiency Report (PQDR) data base was screened. This cumulative file contains two to four years of information - depending on DCMC district. The "defect code" field was used as a screening element; "A" represents a packaging ROD that penetrated to the DCMC level. The second screening element was the "priority code." Values of "1", "2", "3" and "4" for this field represent RODs that were investigated (by the QAR). A priority code of "5" indicates an "information only" ROD.

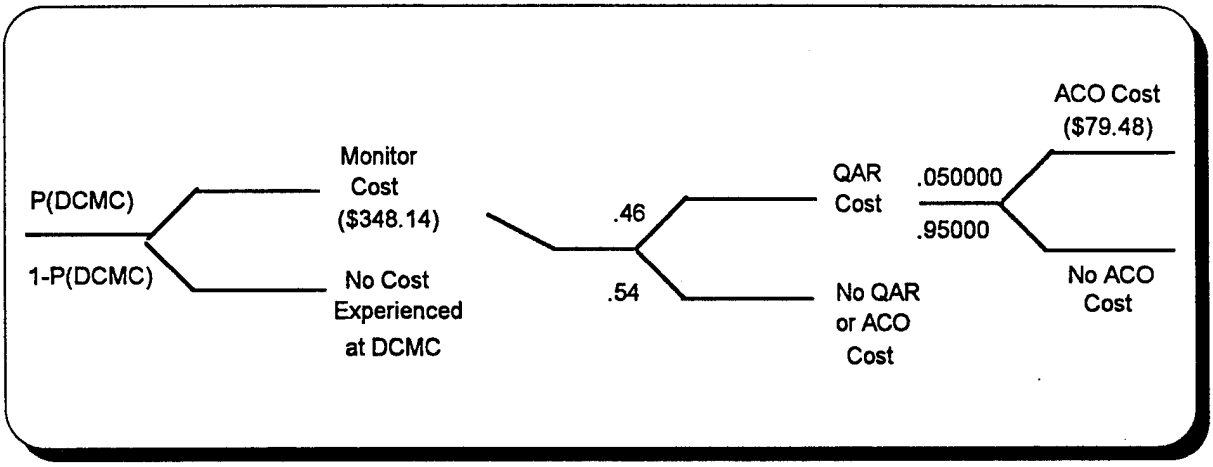
The probability of a QAR investigation was estimated to be the ratio of the number of packaging RODs which were investigated to the total number of packaging RODs reflected on the PQDR file. The probability that investigation is required is .46. The probability of an "information only" ROD - involving only the DCMC monitor - is therefore .54.

The ACO, when he becomes involved with the processing of a ROD in concert with the QAR, accumulates an estimated cost of $79.48. This cost figure is assumed to be constant for any type of ROD for any DLA-managed item. The probability of ACO involvement is usually less than .050000 according to DLA SPD Standard 4232 which covers deficiency or discrepancy procedures taken by the QAR. This value of .050000 is used for this ROD analysis.

Figure R-1 displays the relationship of DCMC activities once a packaging ROD penetrates the DCMC level. This figure also summarized the relative occurrences of actions discussed later.

Figure R-1

FLOW DIAGRAM FOR PACKAGING ROD AT DCMC



The expected cost of DCMC involvement is the product of the actual DCMC cost and the probability of DCMC involvement from Table R-1. These results are given in the last column of the table at Enclosure 1.

In Project DLA-89-P81012, total DCMC costs for individual centers were computed. This was accomplished through an averaging process over all items normally managed by a particular center. The current figures leading to the expected DCMC involvement cost are provided in Table R-2.

Table R-2

Center	Total QAR Cost (Avg for Center)	DCMC Cost	Expected DCMC Cost
DCSC	$1712.20	$1137.63	$11.40
DESC	$1623.58	$1096.82	$10.97
DGSC	$1491.50	$1019.90	$ 4.11
DISC	$1542.73	$1059.60	$ 5.30
DPSC (C&T)	$1613.36	$1092.11	$ 5.46
DPSC (Med)	$1890.07	$1219.40	$12.19

ENCLOSURE 1 TO APPENDIX R

Calculation of Expected DCMC Costs for

Packaging RODs (by Center and FSC)

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1650	DCSC	2,642.00	1,565.29	15.65
2010	DCSC	1,651.60	1,109.70	11.10
2510	DCSC	1,303.74	949.69	9.50
2520	DCSC	1,303.74	949.69	9.50
2530	DCSC	1,303.74	949.69	9.50
2540	DCSC	1,303.74	949.69	9.50
2590	DCSC	1,303.74	949.69	9.50
2815	DCSC	2,034.35	1,285.77	12.86
2825	DCSC	2,034.35	1,285.77	12.86
2910	DCSC	2,034.35	1,285.77	12.86
2920	DCSC	2,034.35	1,285.77	12.86
2940	DCSC	2,034.35	1,285.77	12.86
2990	DCSC	2,034.35	1,285.77	12.86
3010	DCSC	1,919.16	1,232.78	12.33
3020	DCSC	1,919.16	1,232.78	12.33
3030	DCSC	1,919.16	1,232.78	12.33
3040	DCSC	1,919.16	1,232.78	12.33
3805	DCSC	1,651.60	1,109.70	11.10
4210	DCSC	2,034.35	1,285.77	12.86
4220	DCSC	2,034.35	1,285.77	12.86
4310	DCSC	2,034.35	1,285.77	12.86
4330	DCSC	2,034.35	1,285.77	12.86
4420	DCSC	1,651.60	1,109.70	11.10
4510	DCSC	1,351.61	971.71	9.72
4520	DCSC	1,351.61	971.71	9.72
4540	DCSC	1,351.61	971.71	9.72
4710	DCSC	1,351.61	971.71	9.72
4720	DCSC	1,351.61	971.71	9.72
4730	DCSC	1,351.61	971.71	9.72
4820	DCSC	1,517.12	1,047.85	10.48
4940	DCSC	1,517.12	1,047.85	10.48
5440	DCSC	1,651.60	1,109.70	11.10
5510	DCSC	1,570.88	1,072.57	10.73

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1240	DESC	1,420.74	1,003.51	10.04
1260	DESC	1,420.74	1,003.51	10.04
1270	DESC	1,420.74	1,003.51	10.04
1290	DESC	1,420.74	1,003.51	10.04
1420	DESC	1,420.74	1,003.51	10.04
1430	DESC	1,420.74	1,003.51	10.04
1440	DESC	1,420.74	1,003.51	10.04
5805	DESC	2,034.35	1,285.77	12.86
5815	DESC	2,034.35	1,285.77	12.86
5820	DESC	2,034.35	1,285.77	12.86
5825	DESC	2,034.35	1,285.77	12.86
5826	DESC	2,034.35	1,285.77	12.86
5835	DESC	2,034.35	1,285.77	12.86
5836	DESC	2,034.35	1,285.77	12.86
5855	DESC	2,034.35	1,285.77	12.86
5865	DESC	2,034.35	1,285.77	12.86
5895	DESC	2,034.35	1,285.77	12.86
5905	DESC	1,300.37	948.14	9.48
5910	DESC	1,300.37	948.14	9.48
5915	DESC	1,300.37	948.14	9.48
5920	DESC	1,242.97	921.74	9.22
5925	DESC	1,242.97	921.74	9.22
5930	DESC	1,242.97	921.74	9.22
5935	DESC	1,242.97	921.74	9.22
5945	DESC	1,242.97	921.74	9.22
5950	DESC	1,242.97	921.74	9.22
5955	DESC	1,242.97	921.74	9.22
5960	DESC	1,673.63	1,119.84	11.20
5961	DESC	1,300.37	948.14	9.48
5962	DESC	1,673.63	1,119.84	11.20
5963	DESC	1,493.35	1,036.91	10.37
5965	DESC	2,034.35	1,285.77	12.86
5980	DESC	2,034.35	1,285.77	12.86
5985	DESC	2,034.35	1,285.77	12.86
5990	DESC	2,034.35	1,285.77	12.86
5998	DESC	2,034.35	1,285.77	12.86
5999	DESC	2,034.35	1,285.77	12.86
6020	DESC	1,420.74	1,003.51	10.04
6060	DESC	1,420.74	1,003.51	10.04
6625	DESC	1,673.63	1,119.84	11.20
7025	DESC	1,420.74	1,003.51	10.04
7030	DESC	1,420.74	1,003.51	10.04
7045	DESC	1,420.74	1,003.51	10.04
7050	DESC	1,420.74	1,003.51	10.04

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1Ø55	DGSC	1,354.61	973.Ø9	3.89
1Ø75	DGSC	1,354.61	973.Ø9	3.89
156Ø	DGSC	1,354.61	973.Ø9	3.89
167Ø	DGSC	1,354.61	973.Ø9	3.89
168Ø	DGSC	1,354.61	973.Ø9	3.89
2Ø3Ø	DGSC	1,354.61	973.Ø9	3.89
2Ø4Ø	DGSC	1,354.61	973.Ø9	3.89
2Ø9Ø	DGSC	1,354.61	973.Ø9	3.89
3Ø4Ø	DGSC	1,354.61	973.Ø9	3.89
322Ø	DGSC	1,354.61	973.Ø9	3.89
323Ø	DGSC	1,354.61	973.Ø9	3.89
3415	DGSC	1,919.16	1,232.78	4.93
3417	DGSC	1,919.16	1,232.78	4.93
3419	DGSC	1,919.16	1,232.78	4.93
3426	DGSC	1,919.16	1,232.78	4.93
3431	DGSC	1,919.16	1,232.78	4.93
3433	DGSC	1,919.16	1,232.78	4.93
3438	DGSC	1,919.16	1,232.78	4.93
3439	DGSC	1,919.16	1,232.78	4.93
3441	DGSC	1,919.16	1,232.78	4.93
3445	DGSC	1,919.16	1,232.78	4.93
3449	DGSC	1,919.16	1,232.78	4.93
3455	DGSC	1,919.16	1,232.78	4.93
3456	DGSC	1,919.16	1,232.78	4.93
346Ø	DGSC	1,919.16	1,232.78	4.93
3465	DGSC	1,919.16	1,232.78	4.93
351Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
353Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
361Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
3611	DGSC	1,475.Ø1	1,Ø28.47	4.11
3615	DGSC	1,475.Ø1	1,Ø28.47	4.11
3655	DGSC	1,475.Ø1	1,Ø28.47	4.11
368Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
3694	DGSC	1,475.Ø1	1,Ø28.47	4.11
3695	DGSC	1,475.Ø1	1,Ø28.47	4.11
392Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
394Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
399Ø	DGSC	1,475.Ø1	1,Ø28.47	4.11
411Ø	DGSC	1,351.61	971.71	3.89
412Ø	DGSC	1,351.61	971.71	3.89
413Ø	DGSC	1,351.61	971.71	3.89
414Ø	DGSC	1,351.61	971.71	3.89

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
4240	DGSC	1,067.19	840.88	3.36
4920	DGSC	2,034.35	1,285.77	5.14
4933	DGSC	2,034.35	1,285.77	5.14
5220	DGSC	1,475.01	1,028.47	4.11
5355	DGSC	1,475.01	1,028.47	4.11
5940	DGSC	1,172.08	889.13	3.56
5970	DGSC	1,172.08	889.13	3.56
5975	DGSC	1,242.97	921.74	3.69
5977	DGSC	1,242.97	921.74	3.69
5995	DGSC	1,172.08	889.13	3.56
6105	DGSC	2,034.35	1,285.77	5.14
6110	DGSC	1,242.97	921.74	3.69
6115	DGSC	2,034.35	1,285.77	5.14
6120	DGSC	1,770.55	1,164.42	4.66
6125	DGSC	1,770.55	1,164.42	4.66
6130	DGSC	2,034.35	1,285.77	5.14
6135	DGSC	1,770.55	1,164.42	4.66
6140	DGSC	2,034.35	1,285.77	5.14
6150	DGSC	1,242.97	921.74	3.69
6160	DGSC	1,242.97	921.74	3.69
6210	DGSC	1,172.08	889.13	3.56
6220	DGSC	1,172.08	889.13	3.56
6230	DGSC	1,172.08	889.13	3.56
6240	DGSC	1,172.08	889.13	3.56
6250	DGSC	1,172.08	889.13	3.56
6260	DGSC	1,172.08	889.13	3.56
6320	DGSC	1,475.01	1,028.47	4.11
6340	DGSC	1,475.01	1,028.47	4.11
6350	DGSC	1,475.01	1,028.47	4.11
6605	DGSC	1,402.33	995.04	3.98
6610	DGSC	1,402.33	995.04	3.98
6615	DGSC	1,402.33	995.04	3.98
6620	DGSC	1,402.33	995.04	3.98
6635	DGSC	1,402.33	995.04	3.98
6645	DGSC	1,402.33	995.04	3.98
6650	DGSC	1,402.33	995.04	3.98
6655	DGSC	1,402.33	995.04	3.98
6660	DGSC	1,402.33	995.04	3.98
6665	DGSC	1,402.33	995.04	3.98
6670	DGSC	1,402.33	995.04	3.98
6675	DGSC	1,402.33	995.04	3.98
6680	DGSC	1,402.33	995.04	3.98

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
6685	DGSC	1,402.33	995.04	3.98
6695	DGSC	1,402.33	995.04	3.98
6730	DGSC	1,402.33	995.04	3.98
6740	DGSC	1,402.33	995.04	3.98
6750	DGSC	1,402.33	995.04	3.98
6760	DGSC	1,402.33	995.04	3.98
6770	DGSC	1,402.33	995.04	3.98
6810	DGSC	2,034.35	1,285.77	5.14
6820	DGSC	2,034.35	1,285.77	5.14
6830	DGSC	2,034.35	1,285.77	5.14
6840	DGSC	2,034.35	1,285.77	5.14
6850	DGSC	2,034.35	1,285.77	5.14
6910	DGSC	1,475.01	1,028.47	4.11
6920	DGSC	1,475.01	1,028.47	4.11
6930	DGSC	1,475.01	1,028.47	4.11
7105	DGSC	1,475.01	1,028.47	4.11
7240	DGSC	1,475.01	1,028.47	4.11
7310	DGSC	2,034.35	1,285.77	5.14
7320	DGSC	2,034.35	1,285.77	5.14
7360	DGSC	2,034.35	1,285.77	5.14
7610	DGSC	1,570.88	1,072.57	4.29
7640	DGSC	1,570.88	1,072.57	4.29
7670	DGSC	1,570.88	1,072.57	4.29
7690	DGSC	1,570.88	1,072.57	4.29
8110	DGSC	1,475.01	1,028.47	4.11
8120	DGSC	1,475.01	1,028.47	4.11
8125	DGSC	1,475.01	1,028.47	4.11
8130	DGSC	1,475.01	1,028.47	4.11
8140	DGSC	1,475.01	1,028.47	4.11
8145	DGSC	1,475.01	1,028.47	4.11
9150	DGSC	1,475.01	1,028.47	4.11
9160	DGSC	1,475.01	1,028.47	4.11
9320	DGSC	2,034.35	1,285.77	5.14
9330	DGSC	2,034.35	1,285.77	5.14
9340	DGSC	2,034.35	1,285.77	5.14
9350	DGSC	2,034.35	1,285.77	5.14
9390	DGSC	2,034.35	1,285.77	5.14
9905	DGSC	1,475.01	1,028.47	4.11
9925	DGSC	1,475.01	1,028.47	4.11
9930	DGSC	1,475.01	1,028.47	4.11

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
2840	DISC	2,034.35	1,285.77	6.43
2925	DISC	1,469.73	1,026.05	5.13
3110	DISC	1,517.12	1,047.85	5.24
3120	DISC	1,517.12	1,047.85	5.24
3130	DISC	1,517.12	1,047.85	5.24
4010	DISC	1,369.21	979.81	4.90
4020	DISC	1,369.21	979.81	4.90
4030	DISC	1,369.21	979.81	4.90
5305	DISC	1,369.21	979.81	4.90
5306	DISC	1,369.21	979.81	4.90
5307	DISC	1,369.21	979.81	4.90
5310	DISC	1,369.21	979.81	4.90
5315	DISC	1,369.21	979.81	4.90
5320	DISC	1,369.21	979.81	4.90
5325	DISC	1,369.21	979.81	4.90
5330	DISC	1,369.21	979.81	4.90
5340	DISC	1,369.21	979.81	4.90
5360	DISC	1,369.21	979.81	4.90
5365	DISC	1,369.21	979.81	4.90
6145	DISC	1,172.08	889.13	4.45
9505	DISC	2,034.35	1,285.77	6.43
9515	DISC	2,034.35	1,285.77	6.43
9525	DISC	2,034.35	1,285.77	6.43
9530	DISC	2,034.35	1,285.77	6.43
9535	DISC	2,034.35	1,285.77	6.43

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
7210	DPSC-T	1,694.86	1,129.60	5.65
8315	DPSC-T	1,694.86	1,129.60	5.65
8340	DPSC-T	1,694.86	1,129.60	5.65
8405	DPSC-T	1,713.17	1,138.03	5.69
8410	DPSC-T	1,713.17	1,138.03	5.69
8415	DPSC-T	1,067.19	840.88	4.20
8420	DPSC-T	1,713.17	1,138.03	5.69
8430	DPSC-T	2,034.35	1,285.77	6.43
8455	DPSC-T	1,713.17	1,138.03	5.69
8460	DPSC-T	1,640.99	1,104.82	5.52
8465	DPSC-T	1,067.19	840.88	4.20

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
4330	DPSC-M	2,034.35	1,285.77	12.86
4610	DPSC-M	2,034.35	1,285.77	12.86
5120	DPSC-M	2,034.35	1,285.77	12.86
5935	DPSC-M	2,034.35	1,285.77	12.86
5975	DPSC-M	2,034.35	1,285.77	12.86
6240	DPSC-M	2,034.35	1,285.77	12.86
6505	DPSC-M	2,034.35	1,285.77	12.86
6510	DPSC-M	2,034.35	1,285.77	12.86
6515	DPSC-M	2,034.35	1,285.77	12.86
6520	DPSC-M	1,402.33	995.04	9.95
6525	DPSC-M	1,402.33	995.04	9.95
6530	DPSC-M	1,570.88	1,072.57	10.73
6532	DPSC-M	1,067.19	840.88	8.41
6540	DPSC-M	1,402.33	995.04	9.95
6545	DPSC-M	1,664.72	1,115.74	11.16
6550	DPSC-M	2,034.35	1,285.77	12.86
6625	DPSC-M	2,034.35	1,285.77	12.86
6630	DPSC-M	1,402.33	995.04	9.95
6640	DPSC-M	2,034.35	1,285.77	12.86
6840	DPSC-M	2,034.35	1,285.77	12.86
7210	DPSC-M	2,034.35	1,285.77	12.86
7360	DPSC-M	2,034.35	1,285.77	12.86
7520	DPSC-M	2,034.35	1,285.77	12.86
7530	DPSC-M	2,034.35	1,285.77	12.86
7690	DPSC-M	2,034.35	1,285.77	12.86
8110	DPSC-M	2,034.35	1,285.77	12.86
8115	DPSC-M	2,034.35	1,285.77	12.86
8465	DPSC-M	2,034.35	1,285.77	12.86
8530	DPSC-M	2,034.35	1,285.77	12.86
9920	DPSC-M	2,034.35	1,285.77	12.86

APPENDIX S

Development of Costs for

Defense Contract Management Command (DCMC)

Activities for Shipping RODs

The discussion of the general functions and costs associated with DCMC activities for packaging RODs, discussed in Appendix R, apply here. The following table again highlights the probabilities for RODs forwarded from individual supply centers to the DCMC level.

Table S-1

DCMC INVOLVEMENT PROBABILITIES

Center	Probability of DCMC Involvement P(DCMC)
DCSC	0.010
DESC	0.010
DGSC	0.004
DISC	0.005
DPSC (C&T)	0.005
DPSC (Med)	0.010

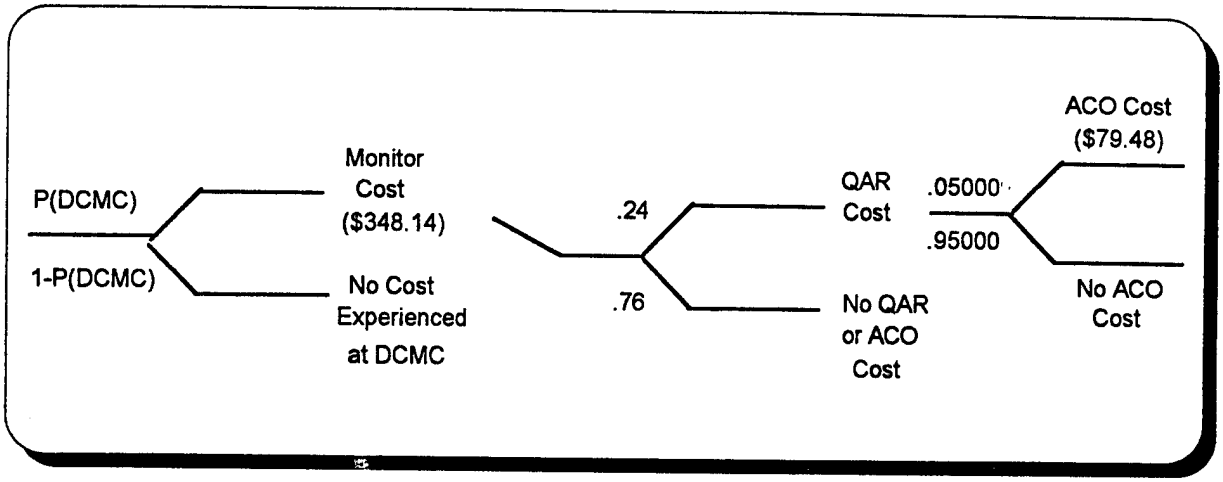
The PQDR database was again utilized to determine the relative frequency of shipping RODs actually investigated by the QAR after the ROD is passed to DCMC. Each record was screened for a "defect code" of "F" (shipping ROD) and "priority codes" of "1", "2", "3" and "4" (for investigation) or "5" (for information). The probability that investigation for a shipping ROD is conducted by QAR is .24. The probability that the shipping ROD will be used by DCMC for only information and general management is .76.

The degree of involvement for the ACO if a ROD is investigated remains the same as it was for the packaging analysis. The probability of an ACO acting on the ROD is .050000 after the QAR becomes involved.

Figure S-1 displays the relationship of DCMC activities once a shipping ROD penetrates the DCMC level.

Figure S-1

FLOW DIAGRAM FOR SHIPPING ROD AT DCMC



If a shipping ROD is handled at the DCMC level, the actual total cost accumulated becomes:

Actual Monitor Cost + Expected QAR Cost + Expected ACO Cost

Using Figure S-1 as a calculating device, this cost becomes:

Actual Monitor Cost

\+ [Probability of QAR Involvement] x [Actual QAR Cost +
(Probability of ACO Involvement given QAR Involvement)
x (Actual ACO Cost)]

Substituting values, this cost becomes:

= $348.14 + [.24] x [QAR Cost + (.050000) ($79.48)]

This total cost is given at Enclosure 1 in the total DCMC cost column for each DLA managed item identified by FSC.

The expected cost of DCMC involvement is the product of the actual DCMC cost and the probability of DCMC involvement from Table S-1. Both the total DCMC costs and expected DCMC costs are given in the table at Enclosure 1.

As in the case of packaging RODs, center monetary figures were generated representing expected DCMC costs. The procedure (formulas) used for DCMC costs for individual items are utilized for center averages. The calculations are given in Table S-2.

Table S-2

CALCULATION OF EXPECTED DCMC COST (FOR EACH CENTER)
FOR SHIPPING RODS

Center	Total QAR Cost (Avg for Center)	DCMC Cost	Expected DCMC Cost
DCSC	$1641.42	$725.58	$7.26
DESC	$1561.27	$704.76	$7.05
DGSC	$1493.33	$690.04	$2.76
DISC	$1604.26	$734.12	$3.67
DPSC (C&T)	$1067.19	$605.22	$3.03
DPSC (Med)	$1664.72	$495.02	$4.95

ENCLOSURE 1 TO APPENDIX S

Calculation of Expected DCMC Costs for

Shipping RODs (by Center and FSC)

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1005	DCSC	1,651.60	745.48	7.45
1010	DCSC	1,651.60	745.48	7.45
1015	DCSC	1,651.60	745.48	7.45
1020	DCSC	1,651.60	745.48	7.45
1095	DCSC	1,651.60	745.48	7.45
1615	DCSC	2,642.00	983.17	9.83
1650	DCSC	2,642.00	983.17	9.83
1730	DCSC	2,642.00	983.17	9.83
2010	DCSC	1,651.60	745.48	7.45
2510	DCSC	1,303.74	661.99	6.62
2520	DCSC	1,303.74	661.99	6.62
2530	DCSC	1,303.74	661.99	6.62
2540	DCSC	1,303.74	661.99	6.62
2590	DCSC	1,303.74	661.99	6.62
2805	DCSC	2,034.35	837.34	8.37
2815	DCSC	2,034.35	837.34	8.37
2825	DCSC	2,034.35	837.34	8.37
2910	DCSC	2,034.35	837.34	8.37
2920	DCSC	2,034.35	837.34	8.37
2930	DCSC	2,034.35	837.34	8.37
2940	DCSC	2,034.35	837.34	8.37
2990	DCSC	2,034.35	837.34	8.37
3010	DCSC	1,919.16	809.69	8.10
3020	DCSC	1,919.16	809.69	8.10
3030	DCSC	1,919.16	809.69	8.10
3040	DCSC	1,919.16	809.69	8.10
3740	DCSC	1,651.60	745.48	7.45
3805	DCSC	1,651.60	745.48	7.45
3820	DCSC	1,651.60	745.48	7.45
3825	DCSC	1,651.60	745.48	7.45
3830	DCSC	1,651.60	745.48	7.45
3950	DCSC	1,651.60	745.48	7.45
4210	DCSC	2,034.35	837.34	8.37
4220	DCSC	2,034.35	837.34	8.37
4310	DCSC	2,034.35	837.34	8.37
4320	DCSC	2,034.35	837.34	8.37
4330	DCSC	2,034.35	837.34	8.37
4410	DCSC	1,651.60	745.48	7.45
4420	DCSC	1,651.60	745.48	7.45
4440	DCSC	1,651.60	745.48	7.45
4460	DCSC	1,651.60	745.48	7.45
4510	DCSC	1,351.61	673.48	6.73

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
4520	DCSC	1,351.61	673.48	6.73
4530	DCSC	1,351.61	673.48	6.73
4540	DCSC	1,351.61	673.48	6.73
4610	DCSC	1,651.60	745.48	7.45
4710	DCSC	1,351.61	673.48	6.73
4720	DCSC	1,351.61	673.48	6.73
4730	DCSC	1,351.61	673.48	6.73
4810	DCSC	1,517.12	713.20	7.13
4820	DCSC	1,517.12	713.20	7.13
4910	DCSC	1,517.12	713.20	7.13
4930	DCSC	1,517.12	713.20	7.13
4940	DCSC	1,517.12	713.20	7.13
5510	DCSC	1,570.88	726.11	7.26
5530	DCSC	1,570.88	726.11	7.26
5660	DCSC	1,651.60	745.48	7.45

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1240	DESC	1,420.74	690.07	6.90
1260	DESC	1,420.74	690.07	6.90
1270	DESC	1,420.74	690.07	6.90
1280	DESC	1,420.74	690.07	6.90
1420	DESC	1,420.74	690.07	6.90
1430	DESC	1,420.74	690.07	6.90
1440	DESC	1,420.74	690.07	6.90
1660	DESC	1,420.74	690.07	6.90
4935	DESC	1,420.74	690.07	6.90
5805	DESC	2,034.35	837.34	8.37
5815	DESC	2,034.35	837.34	8.37
5820	DESC	2,034.35	837.34	8.37
5821	DESC	2,034.35	837.34	8.37
5826	DESC	2,034.35	837.34	8.37
5835	DESC	2,034.35	837.34	8.37
5836	DESC	2,034.35	837.34	8.37
5840	DESC	2,034.35	837.34	8.37
5841	DESC	2,034.35	837.34	8.37
5845	DESC	2,034.35	837.34	8.37
5850	DESC	2,034.35	837.34	8.37
5855	DESC	2,034.35	837.34	8.37
5865	DESC	2,034.35	837.34	8.37
5895	DESC	2,034.35	837.34	8.37
5905	DESC	1,300.37	661.18	6.61
5910	DESC	1,300.37	661.18	6.61
5915	DESC	1,300.37	661.18	6.61
5920	DESC	1,242.97	647.41	6.47
5925	DESC	1,242.97	647.41	6.47
5930	DESC	1,242.97	647.41	6.47
5935	DESC	1,242.97	647.41	6.47
5945	DESC	1,242.97	647.41	6.47
5950	DESC	1,242.97	647.41	6.47
5955	DESC	1,242.97	647.41	6.47
5960	DESC	1,673.63	750.77	7.51
5961	DESC	1,300.37	661.18	6.61
5962	DESC	1,673.63	750.77	7.51
5963	DESC	1,493.35	707.50	7.07
5965	DESC	2,034.35	837.34	8.37
5980	DESC	2,034.35	837.34	8.37
5985	DESC	2,034.35	837.34	8.37
5990	DESC	2,034.35	837.34	8.37
5995	DESC	2,034.35	837.34	8.37

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
5998	DESC	2,034.35	837.34	8.37
5999	DESC	2,034.35	837.34	8.37
6060	DESC	1,420.74	690.07	6.90
6625	DESC	1,673.63	750.77	7.51
7010	DESC	1,420.74	690.07	6.90
7025	DESC	1,420.74	690.07	6.90
7030	DESC	1,420.74	690.07	6.90
7035	DESC	1,420.74	690.07	6.90
7045	DESC	1,420.74	690.07	6.90
7050	DESC	1,420.74	690.07	6.90

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1055	DGSC	1,354.61	674.20	2.70
1560	DGSC	1,354.61	674.20	2.70
1670	DGSC	1,354.61	674.20	2.70
1680	DGSC	1,354.61	674.20	2.70
2030	DGSC	1,354.61	674.20	2.70
2040	DGSC	1,354.61	674.20	2.70
2090	DGSC	1,354.61	674.20	2.70
3230	DGSC	1,354.61	674.20	2.70
3413	DGSC	1,919.16	809.69	3.24
3415	DGSC	1,919.16	809.69	3.24
3416	DGSC	1,919.16	809.69	3.24
3417	DGSC	1,919.16	809.69	3.24
3419	DGSC	1,919.16	809.69	3.24
3424	DGSC	1,919.16	809.69	3.24
3426	DGSC	1,919.16	809.69	3.24
3431	DGSC	1,919.16	809.69	3.24
3433	DGSC	1,919.16	809.69	3.24
3439	DGSC	1,919.16	809.69	3.24
3441	DGSC	1,919.16	809.69	3.24
3444	DGSC	1,919.16	809.69	3.24
3445	DGSC	1,919.16	809.69	3.24
3455	DGSC	1,919.16	809.69	3.24
3456	DGSC	1,919.16	809.69	3.24
3460	DGSC	1,919.16	809.69	3.24
3510	DGSC	1,475.01	703.10	2.81
3530	DGSC	1,475.01	703.10	2.81
3610	DGSC	1,475.01	703.10	2.81
3611	DGSC	1,475.01	703.10	2.81
3615	DGSC	1,475.01	703.10	2.81
3655	DGSC	1,475.01	703.10	2.81
3694	DGSC	1,475.01	703.10	2.81
3695	DGSC	1,475.01	703.10	2.81
3920	DGSC	1,475.01	703.10	2.81
3940	DGSC	1,475.01	703.10	2.81
3990	DGSC	1,475.01	703.10	2.81
4110	DGSC	1,351.61	673.48	2.69
4120	DGSC	1,351.61	673.48	2.69
4130	DGSC	1,351.61	673.48	2.69
4140	DGSC	1,351.61	673.48	2.69
4240	DGSC	1,067.19	605.22	2.42
4920	DGSC	2,034.35	837.34	3.35

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
4933	DGSC	2,034.35	837.34	3.35
5220	DGSC	1,475.01	703.10	2.81
5355	DGSC	1,475.01	703.10	2.81
5940	DGSC	1,172.08	630.39	2.52
5970	DGSC	1,172.08	630.39	2.52
5975	DGSC	1,242.97	647.41	2.59
5977	DGSC	1,242.97	647.41	2.59
5995	DGSC	1,172.08	630.39	2.52
6105	DGSC	2,034.35	837.34	3.35
6110	DGSC	1,242.97	647.41	2.59
6115	DGSC	2,034.35	837.34	3.35
6120	DGSC	1,770.55	774.03	3.10
6125	DGSC	1,770.55	774.03	3.10
6130	DGSC	2,034.35	837.34	3.35
6135	DGSC	1,770.55	774.03	3.10
6140	DGSC	2,034.35	837.34	3.35
6150	DGSC	1,242.97	647.41	2.59
6160	DGSC	1,242.97	647.41	2.59
6210	DGSC	1,172.08	630.39	2.52
6220	DGSC	1,172.08	630.39	2.52
6230	DGSC	1,172.08	630.39	2.52
6240	DGSC	1,172.08	630.39	2.52
6250	DGSC	1,172.08	630.39	2.52
6260	DGSC	1,172.08	630.39	2.52
6320	DGSC	1,475.01	703.10	2.81
6340	DGSC	1,475.01	703.10	2.81
6350	DGSC	1,475.01	703.10	2.81
6605	DGSC	1,402.33	685.65	2.74
6610	DGSC	1,402.33	685.65	2.74
6615	DGSC	1,402.33	685.65	2.74
6620	DGSC	1,402.33	685.65	2.74
6635	DGSC	1,402.33	685.65	2.74
6645	DGSC	1,402.33	685.65	2.74
6650	DGSC	1,402.33	685.65	2.74
6655	DGSC	1,402.33	685.65	2.74
6660	DGSC	1,402.33	685.65	2.74
6665	DGSC	1,402.33	685.65	2.74
6670	DGSC	1,402.33	685.65	2.74
6675	DGSC	1,402.33	685.65	2.74
6680	DGSC	1,402.33	685.65	2.74
6685	DGSC	1,402.33	685.65	2.74
6695	DGSC	1,402.33	685.65	2.74

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
6720	DGSC	1,402.33	685.65	2.74
6730	DGSC	1,402.33	685.65	2.74
6740	DGSC	1,402.33	685.65	2.74
6750	DGSC	1,402.33	685.65	2.74
6760	DGSC	1,402.33	685.65	2.74
6810	DGSC	2,034.35	837.34	3.35
6830	DGSC	2,034.35	837.34	3.35
6840	DGSC	2,034.35	837.34	3.35
6850	DGSC	2,034.35	837.34	3.35
6920	DGSC	1,475.01	703.10	2.81
6930	DGSC	1,475.01	703.10	2.81
7105	DGSC	1,475.01	703.10	2.81
7240	DGSC	1,475.01	703.10	2.81
7310	DGSC	2,034.35	837.34	3.35
7320	DGSC	2,034.35	837.34	3.35
7330	DGSC	2,034.35	837.34	3.35
7530	DGSC	2,034.35	837.34	3.35
7610	DGSC	1,570.88	726.11	2.90
7690	DGSC	1,570.88	726.11	2.90
8110	DGSC	1,475.01	703.10	2.81
8120	DGSC	1,475.01	703.10	2.81
8125	DGSC	1,475.01	703.10	2.81
8140	DGSC	1,475.01	703.10	2.81
8145	DGSC	1,475.01	703.10	2.81
9150	DGSC	1,475.01	703.10	2.81
9160	DGSC	1,475.01	703.10	2.81
9320	DGSC	2,034.35	837.34	3.35
9330	DGSC	2,034.35	837.34	3.35
9340	DGSC	2,034.35	837.34	3.35
9390	DGSC	2,034.35	837.34	3.35
9925	DGSC	1,475.01	703.10	2.81

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
1560	DISC	2,034.35	837.34	4.19
2810	DISC	2,034.35	837.34	4.19
2835	DISC	2,034.35	837.34	4.19
2840	DISC	2,034.35	837.34	4.19
2915	DISC	1,469.73	701.83	3.51
2925	DISC	1,469.73	701.83	3.51
2935	DISC	1,469.73	701.83	3.51
2945	DISC	1,469.73	701.83	3.51
2950	DISC	1,469.73	701.83	3.51
2995	DISC	1,469.73	701.83	3.51
3110	DISC	1,517.12	713.20	3.57
3120	DISC	1,517.12	713.20	3.57
3130	DISC	1,517.12	713.20	3.57
4010	DISC	1,369.21	677.70	3.39
4020	DISC	1,369.21	677.70	3.39
4030	DISC	1,369.21	677.70	3.39
5305	DISC	1,369.21	677.70	3.39
5306	DISC	1,369.21	677.70	3.39
5307	DISC	1,369.21	677.70	3.39
5310	DISC	1,369.21	677.70	3.39
5315	DISC	1,369.21	677.70	3.39
5320	DISC	1,369.21	677.70	3.39
5325	DISC	1,369.21	677.70	3.39
5330	DISC	1,369.21	677.70	3.39
5335	DISC	1,369.21	677.70	3.39
5340	DISC	1,369.21	677.70	3.39
5360	DISC	1,369.21	677.70	3.39
5365	DISC	1,369.21	677.70	3.39
6145	DISC	1,172.08	630.39	3.15
9505	DISC	2,034.35	837.34	4.19
9510	DISC	2,034.35	837.34	4.19
9515	DISC	2,034.35	837.34	4.19
9520	DISC	2,034.35	837.34	4.19
9525	DISC	2,034.35	837.34	4.19
9530	DISC	2,034.35	837.34	4.19
9535	DISC	2,034.35	837.34	4.19
9540	DISC	2,034.35	837.34	4.19
9650	DISC	1,469.73	701.83	3.51

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
8415	DPSC-T	1,067.19	605.22	3.03

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
3770	DPSC-M	1,732.24	764.83	7.65
4540	DPSC-M	1,732.24	764.83	7.65
4720	DPSC-M	1,732.24	764.83	7.65
5110	DPSC-M	1,732.24	764.83	7.65
5315	DPSC-M	1,732.24	764.83	7.65
5330	DPSC-M	1,732.24	764.83	7.65
5930	DPSC-M	1,732.24	764.83	7.65
5935	DPSC-M	1,732.24	764.83	7.65
5945	DPSC-M	1,732.24	764.83	7.65
5999	DPSC-M	1,732.24	764.83	7.65
6130	DPSC-M	1,732.24	764.83	7.65
6140	DPSC-M	1,732.24	764.83	7.65
6230	DPSC-M	1,732.24	764.83	7.65
6240	DPSC-M	1,732.24	764.83	7.65
6505	DPSC-M	2,034.35	837.34	8.37
6508	DPSC-M	1,664.72	748.63	7.49
6510	DPSC-M	2,034.35	837.34	8.37
6515	DPSC-M	2,034.35	837.34	8.37
6520	DPSC-M	1,402.33	685.65	6.86
6525	DPSC-M	1,402.33	685.65	6.86
6530	DPSC-M	1,570.88	726.11	7.26
6532	DPSC-M	1,067.19	605.22	6.05
6540	DPSC-M	1,402.33	685.65	6.86
6545	DPSC-M	1,664.72	748.63	7.49
6550	DPSC-M	2,034.35	837.34	8.37
6630	DPSC-M	1,402.33	685.65	6.86
6640	DPSC-M	2,034.35	837.34	8.37
6650	DPSC-M	1,732.24	764.83	7.65
6665	DPSC-M	1,732.24	764.83	7.65
6670	DPSC-M	1,732.24	764.83	7.65
6680	DPSC-M	1,732.24	764.83	7.65
6810	DPSC-M	1,732.24	764.83	7.65
6830	DPSC-M	1,732.24	764.83	7.65
6840	DPSC-M	1,732.24	764.83	7.65
6850	DPSC-M	1,732.24	764.83	7.65
7210	DPSC-M	1,732.24	764.83	7.65
7360	DPSC-M	1,732.24	764.83	7.65
7530	DPSC-M	1,732.24	764.83	7.65
7610	DPSC-M	1,732.24	764.83	7.65
7690	DPSC-M	1,732.24	764.83	7.65
7930	DPSC-M	1,732.24	764.83	7.65
8105	DPSC-M	1,732.24	764.83	7.65

FSC	CENTER	TOTAL QAR COST	TOTAL DCMC COST	EXPECTED DCMC COST
8110	DPSC-M	1,732.24	764.83	7.65
8115	DPSC-M	1,732.24	764.83	7.65
8430	DPSC-M	1,732.24	764.83	7.65
8465	DPSC-M	1,732.24	764.83	7.65
8540	DPSC-M	1,732.24	764.83	7.65
9320	DPSC-M	1,732.24	764.83	7.65

APPENDIX T

Table of Administrative Costs

(Sorted by Center and FSC Within Center)

for Packaging RODs

This appendix provides cost results for all FSCs within DLA management. Results are provided separately for each center. The FSC and the respective center that manages an item identified by the FSC are the first two elements in the table. The next column, Expected Costs for Non-DLA Activities, reflects the average packaging ROD costs for discrepant items accumulated by ultimate users, retail supply points, and service maintenance facilities - all of which are external to DLA Activities. The column entitled Expected Costs for DLA Activities accumulates those costs incurred by all elements at the supply centers and DLA depots involved in the ROD reporting and resolution process. The next column contains the Expected Cost of all DLA Activities. The final column, the Expected Total Cost is simply the sum of the previous three monetary values for each FSC.

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1650	DCSC	22.74	86.61	15.65	125.00
2010	DCSC	22.74	86.61	11.10	120.45
2510	DCSC	22.74	86.61	9.50	118.85
2520	DCSC	22.74	86.61	9.50	118.85
2530	DCSC	22.74	86.61	9.50	118.85
2540	DCSC	22.74	86.61	9.50	118.85
2590	DCSC	22.74	86.61	9.50	118.85
2815	DCSC	22.74	86.61	12.86	122.21
2825	DCSC	22.74	86.61	12.86	122.21
2910	DCSC	22.74	86.61	12.86	122.21
2920	DCSC	22.74	86.61	12.86	122.21
2940	DCSC	22.74	86.61	12.86	122.21
2990	DCSC	22.74	86.61	12.86	122.21
3010	DCSC	22.74	86.61	12.33	121.68
3020	DCSC	22.74	86.61	12.33	121.68
3030	DCSC	22.74	86.61	12.33	121.68
3040	DCSC	22.74	86.61	12.33	121.68
3805	DCSC	22.74	86.61	11.10	120.45
4210	DCSC	22.74	86.61	12.86	122.21
4220	DCSC	22.74	86.61	12.86	122.21
4310	DCSC	22.74	86.61	12.86	122.21
4330	DCSC	22.74	86.61	12.86	122.21
4420	DCSC	22.74	86.61	11.10	120.45
4510	DCSC	22.74	86.61	9.72	119.07
4520	DCSC	22.74	86.61	9.72	119.07
4540	DCSC	22.74	86.61	9.72	119.07
4710	DCSC	22.74	86.61	9.72	119.07
4720	DCSC	22.74	86.61	9.72	119.07
4730	DCSC	22.74	86.61	9.72	119.07
4820	DCSC	22.74	86.61	10.48	119.83
4940	DCSC	22.74	86.61	10.48	119.83
5440	DCSC	22.74	86.61	11.10	120.45
5510	DCSC	22.74	86.61	10.73	120.08

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1240	DESC	13.55	80.87	10.04	104.46
1260	DESC	13.55	80.87	10.04	104.46
1270	DESC	13.55	80.87	10.04	104.46
1290	DESC	13.55	80.87	10.04	104.46
1420	DESC	13.55	80.87	10.04	104.46
1430	DESC	13.55	80.87	10.04	104.46
1440	DESC	13.55	80.87	10.04	104.46
5805	DESC	13.55	80.87	12.86	107.28
5815	DESC	13.55	80.87	12.86	107.28
5820	DESC	13.55	80.87	12.86	107.28
5825	DESC	13.55	80.87	12.86	107.28
5826	DESC	13.55	80.87	12.86	107.28
5835	DESC	13.55	80.87	12.86	107.28
5836	DESC	13.55	80.87	12.86	107.28
5855	DESC	13.55	80.87	12.86	107.28
5865	DESC	13.55	80.87	12.86	107.28
5895	DESC	13.55	80.87	12.86	107.28
5905	DESC	13.55	80.87	9.48	103.90
5910	DESC	13.55	80.87	9.48	103.90
5915	DESC	13.55	80.87	9.48	103.90
5920	DESC	13.55	80.87	9.22	103.64
5925	DESC	13.55	80.87	9.22	103.64
5930	DESC	13.55	80.87	9.22	103.64
5935	DESC	13.55	80.87	9.22	103.64
5945	DESC	13.55	80.87	9.22	103.64
5950	DESC	13.55	80.87	9.22	103.64
5955	DESC	13.55	80.87	9.22	103.64
5960	DESC	13.55	80.87	11.20	105.62
5961	DESC	13.55	80.87	9.48	103.90
5962	DESC	13.55	80.87	11.20	105.62
5963	DESC	13.55	80.87	10.37	104.79
5965	DESC	13.55	80.87	12.86	107.28
5980	DESC	13.55	80.87	7.02	101.44
5985	DESC	13.55	80.87	7.02	101.44
5990	DESC	13.55	80.87	7.02	101.44

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
5998	DESC	13.55	80.87	12.86	107.28
5999	DESC	13.55	80.87	12.86	107.28
6020	DESC	13.55	80.87	10.04	104.46
6060	DESC	13.55	80.87	10.04	104.46
6625	DESC	13.55	80.87	11.20	105.62
7025	DESC	13.55	80.87	10.04	104.46
7030	DESC	13.55	80.87	10.04	104.46
7045	DESC	13.55	80.87	10.04	104.46
7050	DESC	13.55	80.87	10.04	104.46

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1055	DGSC	17.63	132.78	3.89	154.30
1075	DGSC	17.63	132.78	3.89	154.30
1560	DGSC	17.63	132.78	3.89	154.30
1670	DGSC	17.63	132.78	3.89	154.30
1680	DGSC	17.63	132.78	3.89	154.30
2030	DGSC	17.63	132.78	3.89	154.30
2040	DGSC	17.63	132.78	3.89	154.30
2090	DGSC	17.63	132.78	3.89	154.30
3040	DGSC	17.63	132.78	3.89	154.30
3220	DGSC	17.63	132.78	3.89	154.30
3230	DGSC	17.63	132.78	3.89	154.30
3415	DGSC	17.63	132.78	4.93	155.34
3417	DGSC	17.63	132.78	4.93	155.34
3419	DGSC	17.63	132.78	4.93	155.34
3426	DGSC	17.63	132.78	4.93	155.34
3431	DGSC	17.63	132.78	4.93	155.34
3433	DGSC	17.63	132.78	4.93	155.34
3438	DGSC	17.63	132.78	4.93	155.34
3439	DGSC	17.63	132.78	4.93	155.34
3441	DGSC	17.63	132.78	4.93	155.34
3445	DGSC	17.63	132.78	4.93	155.34
3449	DGSC	17.63	132.78	4.93	155.34
3455	DGSC	17.63	132.78	4.93	155.34
3456	DGSC	17.63	132.78	4.93	155.34
3460	DGSC	17.63	132.78	4.93	155.34
3465	DGSC	17.63	132.78	4.93	155.34
3510	DGSC	17.63	132.78	4.11	154.52
3530	DGSC	17.63	132.78	4.11	154.52
3610	DGSC	17.63	132.78	4.11	154.52
3611	DGSC	17.63	132.78	4.11	154.52
3615	DGSC	17.63	132.78	4.11	154.52
3655	DGSC	17.63	132.78	4.11	154.52
3680	DGSC	17.63	132.78	4.11	154.52
3694	DGSC	17.63	132.78	4.11	154.52
3695	DGSC	17.63	132.78	4.11	154.52

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
3920	DGSC	17.63	132.78	4.11	154.52
3940	DGSC	17.63	132.78	4.11	154.52
3990	DGSC	17.63	132.78	4.11	154.52
4110	DGSC	17.63	132.78	3.89	154.30
4120	DGSC	17.63	132.78	3.89	154.30
4130	DGSC	17.63	132.78	3.89	154.30
4140	DGSC	17.63	132.78	3.89	154.30
4240	DGSC	17.63	132.78	3.36	153.77
4920	DGSC	17.63	132.78	5.14	155.55
4933	DGSC	17.63	132.78	5.14	155.55
5220	DGSC	17.63	132.78	4.11	154.52
5355	DGSC	17.63	132.78	4.11	154.52
5940	DGSC	17.63	132.78	3.56	153.97
5970	DGSC	17.63	132.78	3.56	153.97
5975	DGSC	17.63	132.78	3.69	154.10
5977	DGSC	17.63	132.78	3.69	154.10
5995	DGSC	17.63	132.78	3.56	153.97
6105	DGSC	17.63	132.78	5.14	155.55
6110	DGSC	17.63	132.78	3.69	154.10
6115	DGSC	17.63	132.78	5.14	155.55
6120	DGSC	17.63	132.78	4.66	155.07
6125	DGSC	17.63	132.78	4.66	155.07
6130	DGSC	17.63	132.78	5.14	155.55
6135	DGSC	17.63	132.78	4.66	155.07
6140	DGSC	17.63	132.78	5.14	155.55
6150	DGSC	17.63	132.78	3.69	154.10
6160	DGSC	17.63	132.78	3.69	154.10
6210	DGSC	17.63	132.78	3.56	153.97
6220	DGSC	17.63	132.78	3.56	153.97
6230	DGSC	17.63	132.78	3.56	153.97
6240	DGSC	17.63	132.78	3.56	153.97
6250	DGSC	17.63	132.78	3.56	153.97
6260	DGSC	17.63	132.78	3.56	153.97
6320	DGSC	17.63	132.78	4.11	154.52
6340	DGSC	17.63	132.78	4.11	154.52

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
6350	DGSC	17.63	132.78	4.11	154.52
6605	DGSC	17.63	132.78	3.98	154.39
6610	DGSC	17.63	132.78	3.98	154.39
6615	DGSC	17.63	132.78	3.98	154.39
6620	DGSC	17.63	132.78	3.98	154.39
6635	DGSC	17.63	132.78	3.98	154.39
6645	DGSC	17.63	132.78	3.98	154.39
6650	DGSC	17.63	132.78	3.98	154.39
6655	DGSC	17.63	132.78	3.98	154.39
6660	DGSC	17.63	132.78	3.98	154.39
6665	DGSC	17.63	132.78	3.98	154.39
6670	DGSC	17.63	132.78	3.98	154.39
6675	DGSC	17.63	132.78	3.98	154.39
6680	DGSC	17.63	132.78	3.98	154.39
6685	DGSC	17.63	132.78	3.98	154.39
6695	DGSC	17.63	132.78	3.98	154.39
6730	DGSC	17.63	132.78	3.98	154.39
6740	DGSC	17.63	132.78	3.98	154.39
6750	DGSC	17.63	132.78	3.98	154.39
6760	DGSC	17.63	132.78	3.98	154.39
6770	DGSC	17.63	132.78	3.98	154.39
6810	DGSC	17.63	132.78	5.14	155.55
6820	DGSC	17.63	132.78	5.14	155.55
6830	DGSC	17.63	132.78	5.14	155.55
6840	DGSC	17.63	132.78	5.14	155.55
6850	DGSC	17.63	132.78	5.14	155.55
6910	DGSC	17.63	132.78	4.11	154.52
6920	DGSC	17.63	132.78	4.11	154.52
6930	DGSC	17.63	132.78	4.11	154.52
7105	DGSC	17.63	132.78	4.11	154.52
7240	DGSC	17.63	132.78	4.11	154.52
7310	DGSC	17.63	132.78	5.14	155.55
7320	DGSC	17.63	132.78	5.14	155.55
7360	DGSC	17.63	132.78	5.14	155.55
7610	DGSC	17.63	132.78	4.29	154.70

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
7640	DGSC	17.63	132.78	4.29	154.70
7670	DGSC	17.63	132.78	4.29	154.70
7690	DGSC	17.63	132.78	4.29	154.70
8110	DGSC	17.63	132.78	4.11	154.52
8120	DGSC	17.63	132.78	4.11	154.52
8125	DGSC	17.63	132.78	4.11	154.52
8130	DGSC	17.63	132.78	4.11	154.52
8140	DGSC	17.63	132.78	4.11	154.52
8145	DGSC	17.63	132.78	4.11	154.52
9150	DGSC	17.63	132.78	4.11	154.52
9160	DGSC	17.63	132.78	4.11	154.52
9320	DGSC	17.63	132.78	5.14	155.55
9330	DGSC	17.63	132.78	5.14	155.55
9340	DGSC	17.63	132.78	5.14	155.55
9350	DGSC	17.63	132.78	5.14	155.55
9390	DGSC	17.63	132.78	5.14	155.55
9905	DGSC	17.63	132.78	4.11	154.52
9925	DGSC	17.63	132.78	4.11	154.52
9930	DGSC	17.63	132.78	4.11	154.52

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
2840	DISC	20.49	70.85	6.43	97.77
2925	DISC	20.49	70.85	5.13	96.47
3110	DISC	20.49	70.85	5.24	96.58
3120	DISC	20.49	70.85	5.24	96.58
3130	DISC	20.49	70.85	5.24	96.58
4010	DISC	20.49	70.85	4.90	96.24
4020	DISC	20.49	70.85	4.90	96.24
4030	DISC	20.49	70.85	4.90	96.24
5305	DISC	20.49	70.85	4.90	96.24
5306	DISC	20.49	70.85	4.90	96.24
5307	DISC	20.49	70.85	4.90	96.24
5310	DISC	20.49	70.85	4.90	96.24
5315	DISC	20.49	70.85	4.90	96.24
5320	DISC	20.49	70.85	4.90	96.24
5325	DISC	20.49	70.85	4.90	96.24
5330	DISC	20.49	70.85	4.90	96.24
5340	DISC	20.49	70.85	4.90	96.24
5360	DISC	20.49	70.85	4.90	96.24
5365	DISC	20.49	70.85	4.90	96.24
6145	DISC	20.49	70.85	4.45	95.79
9505	DISC	20.49	70.85	6.43	97.77
9515	DISC	20.49	70.85	6.43	97.77
9525	DISC	20.49	70.85	6.43	97.77
9530	DISC	20.49	70.85	6.43	97.77
9535	DISC	20.49	70.85	6.43	97.77

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
4330	DPSC-M	10.86	74.85	12.86	98.57
4610	DPSC-M	10.86	74.85	12.86	98.57
5120	DPSC-M	10.86	74.85	12.86	98.57
5935	DPSC-M	10.86	74.85	12.86	98.57
5975	DPSC-M	10.86	74.85	12.86	98.57
6240	DPSC-M	10.86	74.85	12.86	98.57
6505	DPSC-M	10.86	74.85	12.86	98.57
6510	DPSC-M	10.86	74.85	12.86	98.57
6515	DPSC-M	10.86	74.85	12.86	98.57
6520	DPSC-M	10.86	74.85	9.95	95.66
6525	DPSC-M	10.86	74.85	9.95	95.66
6530	DPSC-M	10.86	74.85	10.73	96.44
6532	DPSC-M	10.86	74.85	8.41	94.12
6540	DPSC-M	10.86	74.85	9.95	95.66
6545	DPSC-M	10.86	74.85	11.16	96.87
6550	DPSC-M	10.86	74.85	12.86	98.57
6625	DPSC-M	10.86	74.85	12.86	98.57
6630	DPSC-M	10.86	74.85	9.95	95.66
6640	DPSC-M	10.86	74.85	12.86	98.57
6840	DPSC-M	10.86	74.85	12.86	98.57
7210	DPSC-M	10.86	74.85	12.86	98.57
7360	DPSC-M	10.86	74.85	12.86	98.57
7520	DPSC-M	10.86	74.85	12.86	98.57
7530	DPSC-M	10.86	74.85	12.86	98.57
7690	DPSC-M	10.86	74.85	12.86	98.57
8110	DPSC-M	10.86	74.85	12.86	98.57
8115	DPSC-M	10.86	74.85	12.86	98.57
8465	DPSC-M	10.86	74.85	12.86	98.57
8530	DPSC-M	10.86	74.85	12.86	98.57
9920	DPSC-M	10.86	74.85	12.86	98.57

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
7210	DPSC-T	22.94	138.01	5.65	166.60
8315	DPSC-T	22.94	138.01	5.65	166.60
8340	DPSC-T	22.94	138.01	5.65	166.60
8405	DPSC-T	22.94	138.01	5.69	166.64
8410	DPSC-T	22.94	138.01	5.69	166.64
8415	DPSC-T	22.94	138.01	4.20	165.15
8420	DPSC-T	22.94	138.01	5.69	166.64
8430	DPSC-T	22.94	138.01	6.43	167.38
8455	DPSC-T	22.94	138.01	5.69	166.64
8460	DPSC-T	22.94	138.01	5.52	166.47
8465	DPSC-T	22.94	138.01	4.20	165.15

APPENDIX U

Table of Administrative Costs

(Sorted by Center and FSC Within Center)

for Shipping RODs

This appendix provides cost results for all FSCs within DLA management. Results are provided separately for each center. The FSC and the respective center that manages an item identified by the FSC are the first two elements in the table. The next column, Expected Costs for non-DLA Activities, reflects the average shipping ROD costs for discrepant items accumulated by ultimate users, retail supply points, and service maintenance facilities - all of which are external to DLA Activities. The column entitled Expected Costs for DLA Activities accumulates those costs incurred by all elements at the supply centers and DLA depots involved in the ROD reporting and resolution process. The next column contains the Expected Cost of all DLA Activities. The final column, the Expected Total Cost is simply the sum of the previous three monetary values for each FSC.

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1005	DCSC	99.00	56.75	7.45	163.20
1010	DCSC	99.00	56.75	7.45	163.20
1015	DCSC	99.00	56.75	7.45	163.20
1020	DCSC	99.00	56.75	7.45	163.20
1095	DCSC	99.00	56.75	7.45	163.20
1615	DCSC	99.00	56.75	9.83	165.58
1650	DCSC	99.00	56.75	9.83	165.58
1730	DCSC	99.00	56.75	9.83	165.58
2010	DCSC	99.00	56.75	7.45	163.20
2510	DCSC	99.00	56.75	6.62	162.37
2520	DCSC	99.00	56.75	6.62	162.37
2530	DCSC	99.00	56.75	6.62	162.37
2540	DCSC	99.00	56.75	6.62	162.37
2590	DCSC	99.00	56.75	6.62	162.37
2805	DCSC	99.00	56.75	8.37	164.12
2815	DCSC	99.00	56.75	8.37	164.12
2825	DCSC	99.00	56.75	8.37	164.12
2910	DCSC	99.00	56.75	8.37	164.12
2920	DCSC	99.00	56.75	8.37	164.12
2930	DCSC	99.00	56.75	8.37	164.12
2940	DCSC	99.00	56.75	8.37	164.12
2990	DCSC	99.00	56.75	8.37	164.12
3010	DCSC	99.00	56.75	8.10	163.85
3020	DCSC	99.00	56.75	8.10	163.85
3030	DCSC	99.00	56.75	8.10	163.85
3040	DCSC	99.00	56.75	8.10	163.85
3740	DCSC	99.00	56.75	7.45	163.20
3805	DCSC	99.00	56.75	7.45	163.20
3820	DCSC	99.00	56.75	7.45	163.20
3825	DCSC	99.00	56.75	7.45	163.20
3830	DCSC	99.00	56.75	7.45	163.20
3950	DCSC	99.00	56.75	7.45	163.20
4210	DCSC	99.00	56.75	8.37	164.12
4220	DCSC	99.00	56.75	8.37	164.12
4310	DCSC	99.00	56.75	8.37	164.12

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
4320	DCSC	99.00	56.75	8.37	164.12
4330	DCSC	99.00	56.75	8.37	164.12
4410	DCSC	99.00	56.75	7.45	163.20
4420	DCSC	99.00	56.75	7.45	163.20
4440	DCSC	99.00	56.75	7.45	163.20
4460	DCSC	99.00	56.75	7.45	163.20
4510	DCSC	99.00	56.75	6.73	162.48
4520	DCSC	99.00	56.75	6.73	162.48
4530	DCSC	99.00	56.75	6.73	162.48
4540	DCSC	99.00	56.75	6.73	162.48
4610	DCSC	99.00	56.75	7.45	163.20
4710	DCSC	99.00	56.75	6.73	162.48
4720	DCSC	99.00	56.75	6.73	162.48
4730	DCSC	99.00	56.75	6.73	162.48
4810	DCSC	99.00	56.75	7.13	162.88
4820	DCSC	99.00	56.75	7.13	162.88
4910	DCSC	99.00	56.75	7.13	162.88
4930	DCSC	99.00	56.75	7.13	162.88
4940	DCSC	99.00	56.75	7.13	162.88
5510	DCSC	99.00	56.75	7.26	163.01
5530	DCSC	99.00	56.75	7.26	163.01
5660	DCSC	99.00	56.75	7.45	163.20

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1240	DESC	88.22	58.54	6.90	153.66
1260	DESC	88.22	58.54	6.90	153.66
1270	DESC	88.22	58.54	6.90	153.66
1280	DESC	88.22	58.54	6.90	153.66
1420	DESC	88.22	58.54	6.90	153.66
1430	DESC	88.22	58.54	6.90	153.66
1440	DESC	88.22	58.54	6.90	153.66
1660	DESC	88.22	58.54	6.90	153.66
4935	DESC	88.22	58.54	6.90	153.66
5805	DESC	88.22	58.54	8.37	155.13
5815	DESC	88.22	58.54	8.37	155.13
5820	DESC	88.22	58.54	8.37	155.13
5821	DESC	88.22	58.54	8.37	155.13
5826	DESC	88.22	58.54	8.37	155.13
5835	DESC	88.22	58.54	8.37	155.13
5836	DESC	88.22	58.54	8.37	155.13
5840	DESC	88.22	58.54	8.37	155.13
5841	DESC	88.22	58.54	8.37	155.13
5845	DESC	88.22	58.54	8.37	155.13
5850	DESC	88.22	58.54	8.37	155.13
5855	DESC	88.22	58.54	8.37	155.13
5865	DESC	88.22	58.54	8.37	155.13
5895	DESC	88.22	58.54	8.37	155.13
5905	DESC	88.22	58.54	6.61	153.37
5910	DESC	88.22	58.54	6.61	153.37
5915	DESC	88.22	58.54	6.61	153.37
5920	DESC	88.22	58.54	6.47	153.23
5925	DESC	88.22	58.54	6.47	153.23
5930	DESC	88.22	58.54	6.47	153.23
5935	DESC	88.22	58.54	6.47	153.23
5945	DESC	88.22	58.54	6.47	153.23
5950	DESC	88.22	58.54	6.47	153.23
5955	DESC	88.22	58.54	6.47	153.23
5960	DESC	88.22	58.54	7.51	154.27
5961	DESC	88.22	58.54	6.61	153.37

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
5962	DESC	88.22	58.54	7.51	154.27
5963	DESC	88.22	58.54	7.07	153.83
5965	DESC	88.22	58.54	8.37	155.13
5980	DESC	88.22	58.54	8.37	155.13
5985	DESC	88.22	58.54	8.37	155.13
5990	DESC	88.22	58.54	8.37	155.13
5995	DESC	88.22	58.54	8.37	155.13
5998	DESC	88.22	58.54	8.37	155.13
5999	DESC	88.22	58.54	8.37	155.13
6060	DESC	88.22	58.54	6.90	153.66
6625	DESC	88.22	58.54	7.51	154.27
7010	DESC	88.22	58.54	6.90	153.66
7025	DESC	88.22	58.54	6.90	153.66
7030	DESC	88.22	58.54	6.90	153.66
7035	DESC	88.22	58.54	6.90	153.66
7045	DESC	88.22	58.54	6.90	153.66
7050	DESC	88.22	58.54	6.90	153.66

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1055	DGSC	93.79	32.28	2.70	128.77
1560	DGSC	93.79	32.28	2.70	128.77
1670	DGSC	93.79	32.28	2.70	128.77
1680	DGSC	93.79	32.28	2.70	128.77
2030	DGSC	93.79	32.28	2.70	128.77
2040	DGSC	93.79	32.28	2.70	128.77
2090	DGSC	93.79	32.28	2.70	128.77
3230	DGSC	93.79	32.28	2.70	128.77
3413	DGSC	93.79	32.28	3.24	129.31
3415	DGSC	93.79	32.28	3.24	129.31
3416	DGSC	93.79	32.28	3.24	129.31
3417	DGSC	93.79	32.28	3.24	129.31
3419	DGSC	93.79	32.28	3.24	129.31
3424	DGSC	93.79	32.28	3.24	129.31
3426	DGSC	93.79	32.28	3.24	129.31
3431	DGSC	93.79	32.28	3.24	129.31
3433	DGSC	93.79	32.28	3.24	129.31
3439	DGSC	93.79	32.28	3.24	129.31
3441	DGSC	93.79	32.28	3.24	129.31
3444	DGSC	93.79	32.28	3.24	129.31
3445	DGSC	93.79	32.28	3.24	129.31
3455	DGSC	93.79	32.28	3.24	129.31
3456	DGSC	93.79	32.28	3.24	129.31
3460	DGSC	93.79	32.28	3.24	129.31
3510	DGSC	93.79	32.28	2.81	128.88
3530	DGSC	93.79	32.28	2.81	128.88
3610	DGSC	93.79	32.28	2.81	128.88
3611	DGSC	93.79	32.28	2.81	128.88
3615	DGSC	93.79	32.28	2.81	128.88
3655	DGSC	93.79	32.28	2.81	128.88
3694	DGSC	93.79	32.28	2.81	128.88
3695	DGSC	93.79	32.28	2.81	128.88
3920	DGSC	93.79	32.28	2.81	128.88
3940	DGSC	93.79	32.28	2.81	128.88
3990	DGSC	93.79	32.28	2.81	128.88

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
4110	DGSC	93.79	32.28	2.69	128.76
4120	DGSC	93.79	32.28	2.69	128.76
4130	DGSC	93.79	32.28	2.69	128.76
4140	DGSC	93.79	32.28	2.69	128.76
4240	DGSC	93.79	32.28	2.42	128.49
4920	DGSC	93.79	32.28	3.35	129.42
4933	DGSC	93.79	32.28	3.35	129.42
5220	DGSC	93.79	32.28	2.81	128.88
5355	DGSC	93.79	32.28	2.81	128.88
5940	DGSC	93.79	32.28	2.52	128.59
5970	DGSC	93.79	32.28	2.52	128.59
5975	DGSC	93.79	32.28	2.59	128.66
5977	DGSC	93.79	32.28	2.59	128.66
5995	DGSC	93.79	32.28	2.52	128.59
6105	DGSC	93.79	32.28	3.35	129.42
6110	DGSC	93.79	32.28	2.59	128.66
6115	DGSC	93.79	32.28	3.35	129.42
6120	DGSC	93.79	32.28	3.10	129.17
6125	DGSC	93.79	32.28	3.10	129.17
6130	DGSC	93.79	32.28	3.35	129.42
6135	DGSC	93.79	32.28	3.10	129.17
6140	DGSC	93.79	32.28	3.35	129.42
6150	DGSC	93.79	32.28	2.59	128.66
6160	DGSC	93.79	32.28	2.59	128.66
6210	DGSC	93.79	32.28	2.52	128.59
6220	DGSC	93.79	32.28	2.52	128.59
6230	DGSC	93.79	32.28	2.52	128.59
6240	DGSC	93.79	32.28	2.52	128.59
6250	DGSC	93.79	32.28	2.52	128.59
6260	DGSC	93.79	32.28	2.52	128.59
6320	DGSC	93.79	32.28	2.81	128.88
6340	DGSC	93.79	32.28	2.81	128.88
6350	DGSC	93.79	32.28	2.81	128.88
6605	DGSC	93.79	32.28	2.74	128.81
6610	DGSC	93.79	32.28	2.74	128.81

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
6615	DGSC	93.79	32.28	2.74	128.81
6620	DGSC	93.79	32.28	2.74	128.81
6635	DGSC	93.79	32.28	2.74	128.81
6645	DGSC	93.79	32.28	2.74	128.81
6650	DGSC	93.79	32.28	2.74	128.81
6655	DGSC	93.79	32.28	2.74	128.81
6660	DGSC	93.79	32.28	2.74	128.81
6665	DGSC	93.79	32.28	2.74	128.81
6670	DGSC	93.79	32.28	2.74	128.81
6675	DGSC	93.79	32.28	2.74	128.81
6680	DGSC	93.79	32.28	2.74	128.81
6685	DGSC	93.79	32.28	2.74	128.81
6695	DGSC	93.79	32.28	2.74	128.81
6720	DGSC	93.79	32.28	2.74	128.81
6730	DGSC	93.79	32.28	2.74	128.81
6740	DGSC	93.79	32.28	2.74	128.81
6750	DGSC	93.79	32.28	2.74	128.81
6760	DGSC	93.79	32.28	2.74	128.81
6810	DGSC	93.79	32.28	3.35	129.42
6830	DGSC	93.79	32.28	3.35	129.42
6840	DGSC	93.79	32.28	3.35	129.42
6850	DGSC	93.79	32.28	3.35	129.42
6920	DGSC	93.79	32.28	2.81	128.88
6930	DGSC	93.79	32.28	2.81	128.88
7105	DGSC	93.79	32.28	2.81	128.88
7240	DGSC	93.79	32.28	2.81	128.88
7310	DGSC	93.79	32.28	3.35	129.42
7320	DGSC	93.79	32.28	3.35	129.42
7330	DGSC	93.79	32.28	3.35	129.42
7530	DGSC	93.79	32.28	3.35	129.42
7610	DGSC	93.79	32.28	2.90	128.97
7690	DGSC	93.79	32.28	2.90	128.97
8110	DGSC	93.79	32.28	2.81	128.88
8120	DGSC	93.79	32.28	2.81	128.88
8125	DGSC	93.79	32.28	2.81	128.88

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
8140	DGSC	93.79	32.28	2.81	128.88
8145	DGSC	93.79	32.28	2.81	128.88
9150	DGSC	93.79	32.28	2.81	128.88
9160	DGSC	93.79	32.28	2.81	128.88
9320	DGSC	93.79	32.28	3.35	129.42
9330	DGSC	93.79	32.28	3.35	129.42
9340	DGSC	93.79	32.28	3.35	129.42
9390	DGSC	93.79	32.28	3.35	129.42
9925	DGSC	93.79	32.28	2.81	128.88

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
1560	DISC	98.60	31.71	4.19	134.50
2810	DISC	98.60	31.71	4.19	134.50
2835	DISC	98.60	31.71	4.19	134.50
2840	DISC	98.60	31.71	4.19	134.50
2915	DISC	98.60	31.71	3.51	133.82
2925	DISC	98.60	31.71	3.51	133.82
2935	DISC	98.60	31.71	3.51	133.82
2945	DISC	98.60	31.71	3.51	133.82
2950	DISC	98.60	31.71	3.51	133.82
2995	DISC	98.60	31.71	3.51	133.82
3110	DISC	98.60	31.71	3.57	133.88
3120	DISC	98.60	31.71	3.57	133.88
3130	DISC	98.60	31.71	3.57	133.88
4010	DISC	98.60	31.71	3.39	133.70
4020	DISC	98.60	31.71	3.39	133.70
4030	DISC	98.60	31.71	3.39	133.70
5305	DISC	98.60	31.71	3.39	133.70
5306	DISC	98.60	31.71	3.39	133.70
5307	DISC	98.60	31.71	3.39	133.70
5310	DISC	98.60	31.71	3.39	133.70
5315	DISC	98.60	31.71	3.39	133.70
5320	DISC	98.60	31.71	3.39	133.70
5325	DISC	98.60	31.71	3.39	133.70
5330	DISC	98.60	31.71	3.39	133.70
5335	DISC	98.60	31.71	3.39	133.70
5340	DISC	98.60	31.71	3.39	133.70
5360	DISC	98.60	31.71	3.39	133.70
5365	DISC	98.60	31.71	3.39	133.70
6145	DISC	98.60	31.71	3.15	133.46
9505	DISC	98.60	31.71	4.19	134.50
9510	DISC	98.60	31.71	4.19	134.50
9515	DISC	98.60	31.71	4.19	134.50
9520	DISC	98.60	31.71	4.19	134.50
9525	DISC	98.60	31.71	4.19	134.50
9530	DISC	98.60	31.71	4.19	134.50

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
9535	DISC	98.60	31.71	4.19	134.50
9540	DISC	98.60	31.71	4.19	134.50
9650	DISC	98.60	31.71	3.51	133.82

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
3770	DPSC-M	85.47	28.69	7.65	121.81
4540	DPSC-M	85.47	28.69	7.65	121.81
4720	DPSC-M	85.47	28.69	7.65	121.81
5110	DPSC-M	85.47	28.69	7.65	121.81
5315	DPSC-M	85.47	28.69	7.65	121.81
5330	DPSC-M	85.47	28.69	7.65	121.81
5930	DPSC-M	85.47	28.69	7.65	121.81
5935	DPSC-M	85.47	28.69	7.65	121.81
5945	DPSC-M	85.47	28.69	7.65	121.81
5999	DPSC-M	85.47	28.69	7.65	121.81
6130	DPSC-M	85.47	28.69	7.65	121.81
6140	DPSC-M	85.47	28.69	7.65	121.81
6230	DPSC-M	85.47	28.69	7.65	121.81
6240	DPSC-M	85.47	28.69	7.65	121.81
6505	DPSC-M	85.47	28.69	8.37	122.53
6508	DPSC-M	85.47	28.69	7.49	121.65
6510	DPSC-M	85.47	28.69	8.37	122.53
6515	DPSC-M	85.47	28.69	8.37	122.53
6520	DPSC-M	85.47	28.69	6.86	121.02
6525	DPSC-M	85.47	28.69	6.86	121.02
6530	DPSC-M	85.47	28.69	7.26	121.42
6532	DPSC-M	85.47	28.69	6.05	120.21
6540	DPSC-M	85.47	28.69	6.86	121.02
6545	DPSC-M	85.47	28.69	7.49	121.65
6550	DPSC-M	85.47	28.69	8.37	122.53
6630	DPSC-M	85.47	28.69	6.86	121.02
6640	DPSC-M	85.47	28.69	8.37	122.53
6650	DPSC-M	85.47	28.69	7.65	121.81
6665	DPSC-M	85.47	28.69	7.65	121.81
6670	DPSC-M	85.47	28.69	7.65	121.81
6680	DPSC-M	85.47	28.69	7.65	121.81
6810	DPSC-M	85.47	28.69	7.65	121.81
6830	DPSC-M	85.47	28.69	7.65	121.81
6840	DPSC-M	85.47	28.69	7.65	121.81

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
6850	DPSC-M	85.47	28.69	7.65	121.81
7210	DPSC-M	85.47	28.69	7.65	121.81
7360	DPSC-M	85.47	28.69	7.65	121.81
7530	DPSC-M	85.47	28.69	7.65	121.81
7610	DPSC-M	85.47	28.69	7.65	121.81
7690	DPSC-M	85.47	28.69	7.65	121.81
7930	DPSC-M	85.47	28.69	7.65	121.81
8105	DPSC-M	85.47	28.69	7.65	121.81
8110	DPSC-M	85.47	28.69	7.65	121.81
8115	DPSC-M	85.47	28.69	7.65	121.81
8430	DPSC-M	85.47	28.69	7.65	121.81
8465	DPSC-M	85.47	28.69	7.65	121.81
8540	DPSC-M	85.47	28.69	7.65	121.81
9320	DPSC-M	85.47	28.69	7.65	121.81

Expected Costs

FSC	CENTER	Non-DLA Activities	DLA Activities (Up to DCMC)	DCMC Activities	Expected Total Costs
8415	DPSC-T	101.67	88.28	3.03	192.98

Cost of Processing Reports of Discrepancy

Part II: Holding Costs for Materiel Identified as Discrepant

September 1995

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I. TYPES OF COSTS

There are two types of costs associated with materiel awaiting disposition instructions that are generated by ROD resolution. The first is the opportunity cost of money. The second cost is called the "pure" supply cost.

A. Opportunity Cost. During the period of time a ROD is being investigated - the time between complaint initiation and ROD closure - supplies may be "frozen." Since an item which has a ROD issued against it is in a suspense mode, the money invested in this particular item is also "tied up". If these funds were not tied-up the government would not incur the interest type cost of using these funds. In the scenario of this project, we can use the time that the ROD is in effect, the value of the items in suspense, and interest rate that the government designates as its cost of money, to calculate the so-called opportunity cost of the ROD.

B. Pure Supply Cost. The other type of cost is that associated with the holding of physical inventory within a storage facility. The suspended materiel occupies valuable floor or bin space within a depot or retail supply activity. Materiel handling equipment is utilized to segregate suspended stocks. Facilities and other materiel support efforts are involved when discrepant stocks are present. These costs - representing other than pure personnel salaries - are computed in this project. The sum total of all expenses incurred with the physical presence of discrepant stocks in a storage facility over time is the pure supply cost.

II. HOLDING COST TABLES

A. The holding cost estimates for packaging RODs for each supply center are provided in Table 1. The holding cost results for shipping RODs are given in Table 2.

Table 1

INDIVIDUAL CENTER RESULTS
PACKAGING RODS

Center	# of Closed RODS With Cost	Avg Complaint Age (Mths)	Avg Lost Opport Cost (per ROD)	Avg Pure Supply Cost	Avg Total Cost Per ROD	Percent of Contract Value
DCSC	138	4.7	$ 182.00	$ 182.90	$ 364.90	3.8
DESC	1109	3.9	$ 128.60	$ 168.00	$ 296.60	3.7
DGSC	4618	2.7	$ 141.90	$ 140.10	$ 282.00	2.4
DISC	793	5.8	$ 248.10	$ 248.70	$ 532.80	7.0
DPSC (C&T)	236	11.9	$2275.50	$2760.50	$5035.90	1.1
DPSC (Med)	678	3.7	$ 535.00	$ 150.30	$ 685.30	2.8

Table 2

INDIVIDUAL CENTER RESULTS
SHIPPING RODS

Center	# of Closed RODS With Cost	Avg Complaint Age (Mths)	Avg Lost Opport Cost (per) ROD)	Avg Pure Supply Cost	Avg Total Cost Per ROD	Percent of Contract Value
DCSC	801	4.6	$ 72.00	$ 73.30	$ 145.30	1.8
DESC	2122	4.6	$ 69.52	$ 91.85	$ 161.37	2.2
DGSC	2319	3.6	$ 87.44	$ 88.08	$ 175.52	1.4
DISC	5717	4.6	$ 90.54	$ 105.58	$ 196.12	2.6
DPSC (C&T)	16	11.4	$876.31	$1068.56	$1944.8	0.1
DPSC (Med)	1356	6.7	$262.37	$ 76.95	$ 339.33	1.7

B. DLA-wide computations were also made for both packaging RODS and shipping RODS. The figures in Table 3 reflect results "rolled up" across all supply centers for packaging RODS. Table 4 presents the same information for shipping RODS. Thus, the total holding cost for each generic DLA packaging ROD averages 3.1 percent of the average contract value; the holding cost average for all DLA shipping RODS represents 2.2 percent of the average contract value.

Table 3

DLA-WIDE RESULTS - PACKAGING RODS

# of Closed RODS With Cost	Average ROD Age (Mths)	Avg Lost Opport Cost (per ROD)	Avg Pure Supply Cost	Avg Total Cost Per ROD	Percent of Contract Value
7572	3.6	252.83	238.35	491.18	3.1

Table 4

DLA-WIDE RESULTS - SHIPPING RODS

# of Closed RODS With Cost	Average ROD Age (Mths)	Avg Lost Opport Cost (per ROD)	Avg Pure Supply Cost	Avg Total Cost Per ROD	Percent of Contract Value
12331	4.6	104.83	95.65	200.48	2.2

III. METHODOLOGY

A. Approach

1. The calculation of lost opportunity costs and pure supply costs depend on certain published factors which may be handled as interest rates in the computations.

2. The rate used for the cost of lost opportunity (cost of money) in this study is 7.3 percent. This figure is discussed in Memorandum M-94, dated 7 Feb 95 from the Office of Management and Budget. This is a real interest rate based on the economic assumptions from the budget and is the most representative overall investment parameter (at the present time).

3. The rates used for the total cost of holding stock in a suspense mode - including both the lost opportunity and pure supply costs - differ from supply center to supply center. The source of these factors is the latest version of the GAO Report, Cost Factors Used to Manage Secondary Items, GAO/NSIAD-92-112, May 1992. The following table displays these rates after accounting for the change from 10 percent to 7.3 percent for the cost of money.

Table 5

TOTAL HOLDING COST RATES

Center	Rate
DCSC	14.3%
DESC	16.3%
DGSC	14.3%
DISC	15.3%
DPSC (C&T)	15.3%
DPSC (Med)	9.3%

4. The difference between the total holding cost and the cost of lost opportunity provides the cost of pure supply actions.

5. In all cases, a value for each type of cost was computed taking into account the total dollar value of all items on a single ROD, the appropriate rate, and the time period that the ROD was being investigated and resolved. In the computations, the rates were handled as normal interest rates compounded over time. The length of a ROD was measured to the nearest day. Therefore, compounding occurred on each day for the entire length of the period that a ROD was in effect.

6. The total holding cost is also expressed in terms of a percentage of average contract value for each given FSC. The effect of a packaging or shipping ROD in monetary terms can therefore be expressed as a proportion of the proposed contract value for a specific FSC.

7. All RODs closed between 1 Oct 91 and 30 Jun 94 and found in the CDCS were considered in this study.

8. Calculations were made for each Federal Supply Class (FSC) at each center. The number of closed RODs, the average age of each ROD, and the costs of lost opportunity and pure supply (per complaint) were all computed. Only items with a National Stock Number (NSN) were considered; RODs regarding an item identified by a part number or other description were not considered.

9. If a ROD was still being resolved at the time of the data call, there is no closure date associated with it - it is an "open" ROD. Since monetary computations depend on a finite time frame, all open RODs were deleted from the generation of costs.

10. Two additional screening procedures were employed to delete "extreme" values for holding cost and contract value percentage. RODs which have passed through the filtering processes described thus far were now subject to "extreme value editing." RODs which attained very high statistics were assumed to be either a result of erroneous input into the CDCS system or, if a "true" and correct entry, an aberration which would certainly bias the average holding cost and, hence, the percentage of contract value represented by a ROD's cost. This procedure reduced undue inflation caused by either an error or an isolated extreme dollar value for a record. This editing became significantly important for FSCs which had a small number of RODs since the statistics would easily be affected by high dollar values for the holding cost.

a. Extreme Holding Cost Values. If a total holding cost was calculated to be greater than $100,000, it was deleted from the sample for an FSC or center analysis.

b. Extreme Contract Percentage Values. If the percentage of average contract value - represented by a holding cost for a particular ROD - exceeds 25 percent, it was declared to be 25 percent.

These two editing processes provide for conservative cost and percentage estimates, and will certainly give the contractor the "benefit of the doubt" in assigning an evaluation factor to a proposed bid.

11. "Overages", which constitute a specific subcategory of shipping RODS, do not accumulate holding costs. If a shipment, which contains an overage of material, arrives at a wholesale or retail supply source, the quantity originally requested or requisitioned will go directly into storage and be ultimately issued. The number of items above the desired quantity - the overage - is not "freezing" any dollars since the government (theoretically) did not pay for the excess amount. Also, no other supply costs are accumulated since the original requested number becomes immediately issuable - no segregated storage area is utilized. However, in the anticipated scheme for the bid evaluation process, the contracting officer will only have access to the total number of shipping RODs across all subcategories of shipping RODs. A more specific breakdown by subcategory, in all likelihood, will not be available. To compensate for this situation, the costs and percentages that constitute the evaluation factors for each FSC are "scaled down" appropriately based on the relative frequency of overage RODs to all shipping RODS. Counts were extracted from the CDCS - utilizing the same screening processes described above - to develop the scaling factor used for all costs and percentages for shipping ROD results. The scheme of computations and results are provided in Table 6. The "X's" represent the computed supply cost, lost opportunity cost, total cost or percent of contract value generated before application of the scaling factor.

Table 6

SCALING FACTOR COMPUTATION FOR SHIPPING RODS

Center	Prop. of Ovg. RODS to Shipping RODs (P)	Scaling Factor (1-P)	Entity (Computed Cost or %)	Scaled Entity (Reported Result)
DCSC	.1290	.8710	X_C	(.8710) * X_C
DESC	.0526	.9474	X_E	(.9474) * X_E
DGSC	.1045	.8955	X_G	(.8955) * X_G
DISC	.1387	.8613	X_I	(.8613) * X_I
DPSC (C&T)	.2519	.7481	X_{PT}	(.7481) * X_{PT}
DPSC (Med)	.2215	.7785	X_{PM}	(.7785) * X_{PM}

B. Development of Data

1. The data base utilized was a locally prepared file containing cumulative complaint histories from each DLA supply center. The source of discrepancy data was the Customer Depot Complaint System (CDCS) provided to the DLA Operations Research Office (DORO) from the Quality Assurance Directorate at each DLA Supply Center.

2. The source of contract information was the cumulative Active Contract File (ACF) maintained by DORO. This data base was used to construct an average contract dollar value for each FSC managed within DLA. Contracts in effect after 1 Oct 91 were used to calculate an average FSC contract value.

3. Each CDCS record representing a single NSN - and thus an FSC - was matched to the set of average FSC contract values to complete each record for further analysis.

4. The key elements for each record became the FSC (of the item reported to be discrepant), the ROD receipt and closure dates, the unit price, the quantity affected, and the average contract value for the FSC.

5. For each complete record that reflects a ROD which was resolved (closed), additional criteria were composed prior to holding cost calculations. A ROD was ultimately selected if it conformed to certain codes.

a. Document-Type Code. The types of RODs considered in this study were coded "6" (Direct Vendor Delivery), "7" (Depot Delivery to Customer), "8" (Depot Customer Return) and "9" (Depot Contract Receipt). These codes represent SF 364 transactions initiated by various supply levels.

b. Cause Code. This is a two-character designation used for all CDCS records. The code values for this analysis were "CN" (indicating contractor noncompliance) and "CS" (indicating subcontractor noncompliance).

c. Discrepancy Code. The first element of this two digit field was reviewed. The following table displays those code values which are of interest within this study.

Table 7

CDCS Discrepancy Codes

Code	General ROD Category	Specific ROD Type
P	Packaging	Packaging
C	Shipping	Poor Condition or Damage
D	Shipping	Supply Documentation
M	Shipping	Misdirected Item
W	Shipping	Wrong Item
O	Shipping	Overage in Shipment
S	Shipping	Shortage in Shipment

C. Computations

1. Since an individual ROD has both a "quantity reported" and a unit price associated with it on the CDCS files, these two elements provide the total cost of discrepant material for that ROD. Similarly, each ROD has a "date received" and "date closed" associated with it. The length of time of suspension of stock becomes the difference of these two dates (in days).

2. Costs are calculated by compounding each day for the entire period. Given that the total dollar value of items on a complaint is "T," the total holding cost (THC) for the supplies is:

$$THC = T\left(1 + \frac{r}{365}\right)^{m}$$

where "r" is the appropriate rate, in decimal form (for example, .073 for lost opportunity or .143 for total holding cost rate for a DGSC item). The cost experienced is the difference between this total holding cost after a period of "m" days and the initial value "T":

$$C_E = THC - T$$

3. After computing cost values for each ROD, all dollar figures are summed to a specific FSC. Average costs (with regard to the number of RODS) are then calculated. The average FSC ROD length (in months) is also computed.

4. The same numerical procedure is used to obtain the supply center roll-up results.

IV. ANALYSIS

A. Attached at Appendix A are the procedures and calculations to determine the DLA-wide packaging ROD holding cost statistics. A set of result tables is provided for FSC analyses for each center. These tables are attached as appendices and are specified below.

Table 8

PACKAGING ROD RESULTS

Appendix	Center
B	DCSC
C	DESC
D	DGSC
E	DISC
F	DPSC(C&T)
G	DPSC(Med)

B. Similarly, the procedures and computations used for determining DLA-wide shipping ROD holding cost statistics are given in Appendix H. The following table lists the appendices for individual center results.

Table 9

SHIPPING ROD RESULTS

Appendix	Center
I	DCSC
J	DESC
K	DGSC
L	DISC
M	DPSC(C&T)
N	DPSC(Med)

C. The various elements of information of the FSC tables are now explained.

1. The column next to the FSC provides the number of RODs for each FSC in the analysis which were closed and which were used to produce the cost statistics.

2. The average ROD age (in months) is then given. The next three columns are the monetary figures. These are, respectively, the average cost of lost opportunity, the average cost of supply (physical storage and other material handling aspects), and the total holding cost per ROD.

3. The last column is simply the ratio of the holding cost to the average contract value for a specific FSC converted to percentage format. The holding cost for each ROD is therefore expressed as a portion of the total contract value. This percentage is utilized in computing the evaluation factor for a particular proposed contract.

APPENDIX A

DLA-Wide Computations and Results for Packaging RODs

Using Table 1 in the main text, the total number of all packaging RODs (resolved and with an associated cost) is:

138	(DCSC)
1,109	(DESC)
4,618	(DGSC)
793	(DISC)
236	(DPSC (C&T))
+ 678	(DPSC (Med))
7,572	

These individual center ROD tallies are used as weights in determining DLA-wide statistics. For example, an estimate of the total holding cost incurred for a DLA packaging ROD (across all supply centers) becomes:

[(138 DCSC packaging ROD) x ($ 364.90/pkg. ROD)
+ (1109 DESC packaging ROD) x ($ 296.60/pkg. ROD)
+ (4618 DGSC packaging ROD) x ($ 282.00/pkg. ROD)
+ (793 DISC packaging ROD) x ($ 532.80/pkg. ROD)
+ (236 DPSC (C&T) packaging ROD) x ($5035.90/pkg. ROD)
+ (678 DPSC (Med) packaging ROD) x ($ 685.30/pkg. ROD)]/
7,572

= $491.18

The same procedure was used for the other result elements. All statistics are provided below:

Average Packaging ROD Age	3.6 months
Average Lost Opportunity Cost (Per Packaging ROD)	$252.83
Average Pure Supply Cost (Per Packaging ROD)	$238.35
Percent of Contract Value	3.1 %

APPENDIX B

DCSC Results for Packaging RODs

(by Federal Supply Class (FSC))

DCSC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
1650	1	2.0	3.12	3.03	6.14	0.05
2010	1	8.7	736.99	743.47	1480.46	13.91
2510	1	2.8	36.87	35.92	72.79	0.89
2520	9	4.1	122.46	121.92	244.38	3.84
2530	1	1.7	6.37	6.17	12.54	0.23
2540	3	3.2	59.23	57.74	116.97	1.39
2590	5	3.1	173.27	169.24	342.51	5.61
2815	6	9.7	39.74	45.62	85.36	1.42
2825	1	11.5	884.65	907.58	1792.23	25.00
2910	4	2.6	15.21	14.80	30.00	0.49
2920	1	1.4	0.30	0.29	0.59	0.01
2940	3	1.0	10.08	9.73	19.80	0.45
2990	3	3.4	48.38	46.75	95.13	2.85
3010	2	6.6	238.40	244.89	483.29	8.32
3020	2	2.2	58.52	56.81	115.34	1.80
3030	1	3.3	9.08	8.88	17.96	1.31
3040	4	3.7	13.02	12.78	25.79	0.57
3805	1	0.7	2.37	2.28	4.65	0.17
4210	3	22.2	28.75	39.83	68.58	0.31
4220	1	7.8	2073.85	2081.86	4155.71	13.78
4310	2	1.9	44.18	42.82	86.99	1.21
4330	3	2.8	35.07	34.08	69.14	1.22
4420	1	8.4	5.85	5.90	11.75	0.11
4510	1	3.3	105.48	103.10	208.58	4.76
4520	18	1.1	562.68	546.52	1109.20	6.96
4540	3	3.6	93.35	91.45	184.81	4.93
4710	6	4.8	225.28	231.57	456.85	9.36
4720	8	5.1	24.78	24.49	49.27	1.20
4730	16	4.0	73.17	72.42	145.59	4.45
4820	6	1.7	17.40	16.97	34.38	0.73
4940	1	11.5	115.84	118.79	234.63	4.81
5440	1	3.3	30.57	29.87	60.44	0.86
5510	19	1.8	110.74	108.00	218.73	2.65
	138	4.7	181.97	182.90	364.87	3.81

APPENDIX C

DESC Results for Packaging RODs

(by Federal Supply Class (FSC))

DESC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
1240	3	0.1	2.43	3.00	5.42	0.04
1260	1	1.2	106.35	132.18	238.53	2.78
1270	1	1.1	169.83	210.93	380.75	6.42
1290	3	2.2	15.22	19.15	34.37	0.33
1420	2	4.7	335.51	431.30	766.81	8.26
1430	1	8.3	5.48	7.14	12.62	0.16
1440	2	0.9	4.74	5.90	10.64	0.12
5805	8	9.4	132.12	184.07	316.19	1.38
5815	4	1.9	8.70	10.80	19.50	0.31
5820	5	2.1	230.43	289.58	520.01	5.90
5825	1	1.5	173.00	215.44	388.44	4.62
5826	2	4.1	263.28	333.72	597.00	3.64
5835	3	1.3	7.49	9.32	16.81	0.07
5836	1	22.8	752.24	1080.85	1833.09	10.09
5855	2	5.1	2.97	3.79	6.76	0.05
5865	1	3.0	100.56	126.44	227.00	1.50
5895	19	1.8	48.69	61.11	109.80	0.83
5905	53	4.3	28.99	36.97	65.95	3.80
5910	22	5.6	672.58	851.57	1524.16	25.00
5915	9	2.2	81.98	103.09	185.07	3.29
5920	3	1.4	4.91	6.09	11.00	0.47
5925	4	9.9	37.00	48.76	85.76	1.66
5930	28	4.2	34.79	45.05	79.84	1.87
5935	69	3.5	98.39	131.91	230.30	9.34
5945	43	3.8	82.42	107.97	190.39	2.34
5950	50	2.4	72.11	96.82	168.93	4.53
5955	15	3.3	51.84	65.45	117.29	3.58
5960	33	7.1	89.19	143.17	232.37	0.39
5961	47	3.6	15.86	20.40	36.26	1.48
5962	224	2.5	47.07	59.49	106.56	3.47
5963	93	2.0	46.75	58.83	105.58	1.46
5965	4	2.2	302.02	377.70	679.71	3.27
5980	18	3.3	55.04	69.77	124.81	3.21

DESC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
5985	15	2.2	45.29	56.77	102.06	1.04
5990	1	3.6	0.63	0.80	1.43	0.01
5998	216	2.2	51.33	64.68	116.01	1.35
5999	60	3.1	28.74	36.63	65.38	2.46
6020	1	6.8	11.57	14.92	26.48	0.49
6060	1	4.5	106.80	135.64	242.45	7.26
6625	11	3.0	519.37	670.56	1189.93	23.09
7025	5	5.6	406.17	551.50	957.67	5.17
7030	4	1.9	9.00	11.38	20.37	0.42
7045	9	2.0	362.37	456.90	819.27	4.78
7050	12	1.9	35.50	44.38	79.89	0.64
	1109	3.9	128.56	168.00	296.56	3.69

APPENDIX D

DGSC Results for Packaging RODs

(by Federal Supply Class (FSC))

DGSC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
1055	2	1.8	62.55	60.83	123.38	1.67
1075	2	3.5	507.94	503.65	1011.59	13.32
1560	122	4.4	102.01	101.86	203.87	1.98
1670	23	4.2	585.72	574.70	1160.42	2.45
1680	59	3.1	203.82	201.89	405.71	3.03
2030	6	2.4	169.22	167.16	336.38	6.46
2040	22	1.5	107.98	104.48	212.46	1.04
2090	10	2.6	232.23	230.99	463.23	2.05
3040	1	0.6	1.08	1.04	2.12	0.02
3220	1	0.4	5.22	5.02	10.23	0.09
3230	2	0.5	1.11	1.06	2.17	0.19
3415	2	1.5	27.97	27.06	55.03	0.80
3417	1	4.6	1447.41	1425.39	2872.80	25.00
3419	2	3.6	209.95	205.55	415.50	2.04
3426	3	2.0	1885.93	1835.91	3721.84	25.00
3431	12	1.5	23.44	22.84	46.29	0.57
3433	15	1.6	39.39	38.23	77.62	2.28
3438	1	2.2	48.54	47.15	95.69	1.24
3439	115	1.9	47.79	46.51	94.31	1.53
3441	6	1.5	69.52	67.39	136.91	1.68
3445	1	0.7	24.28	23.37	47.65	0.55
3449	3	1.2	6.80	6.57	13.37	0.07
3455	91	1.8	16.73	16.38	33.11	1.44
3456	4	2.1	5.81	5.63	11.44	0.56
3460	25	2.4	25.03	24.44	49.46	1.95
3465	2	11.5	497.30	533.94	1031.24	25.00
3510	18	2.7	20.31	19.90	40.21	1.70
3530	2	2.4	22.88	22.08	44.96	0.57
3610	21	3.0	142.48	139.47	281.96	2.21
3611	5	2.5	83.66	80.87	164.53	2.18
3615	3	4.5	280.29	274.78	555.07	1.81
3655	5	0.9	74.99	72.46	147.45	0.97
3680	3	7.4	53.53	54.33	107.86	2.88

DGSC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
3694	4	4.0	117.81	115.37	233.18	2.62
3695	6	2.2	36.02	35.11	71.13	0.72
3920	14	3.7	65.70	66.86	132.55	0.58
3940	9	2.3	114.59	112.63	227.22	1.15
3990	11	1.8	49.19	48.00	97.19	0.34
4110	19	1.9	140.26	136.14	276.39	0.59
4120	8	1.6	155.66	150.94	306.59	0.41
4130	52	2.2	21.61	21.04	42.65	0.91
4140	42	5.0	61.29	62.38	123.67	1.41
4240	153	2.9	93.67	96.03	189.70	1.87
4920	5	1.7	20.16	19.52	39.68	0.47
4933	2	0.8	11.30	10.89	22.20	0.26
5220	3	2.0	21.00	20.29	41.29	1.39
5355	46	3.6	72.19	70.65	142.84	8.16
5940	141	6.1	163.42	177.52	340.94	9.25
5970	167	2.5	43.97	43.74	87.71	3.02
5975	178	4.1	46.86	47.21	94.07	2.57
5977	41	2.5	60.88	59.65	120.53	1.55
5995	170	12.0	277.08	302.42	579.50	7.61
6105	78	2.0	57.43	58.02	115.46	0.89
6110	33	1.5	30.75	30.49	61.24	0.57
6115	11	1.1	19.61	19.00	38.62	0.21
6120	2	3.9	57.81	56.45	114.27	1.23
6125	1	0.8	3.16	3.04	6.21	0.02
6130	51	2.2	68.10	66.61	134.71	1.34
6135	99	3.1	104.17	102.53	206.71	1.91
6140	64	2.6	282.92	277.69	560.61	2.89
6150	74	1.3	18.18	17.62	35.81	0.57
6160	3	1.4	2.80	2.72	5.52	0.06
6210	87	2.8	37.94	37.47	75.41	1.77
6220	54	1.9	70.21	68.61	138.82	1.67
6230	25	3.1	64.31	63.14	127.45	0.56
6240	193	1.5	37.16	36.16	73.32	2.07

DGSC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
6930	1	5.6	0.53	0.52	1.05	0.04
7105	10	2.0	513.76	499.83	1013.59	0.11
7240	3	1.9	98.65	96.88	195.53	0.06
7310	49	2.4	118.77	116.89	235.66	1.05
7320	29	1.9	104.27	101.97	206.24	1.62
7360	3	1.7	133.43	129.51	262.94	0.18
7610	9	1.9	16.59	16.08	32.67	1.36
7640	3	1.4	4.53	4.38	8.92	0.59
7670	1	4.8	41.78	41.21	82.99	2.92
7690	41	2.7	61.41	60.03	121.44	7.17
8110	45	1.9	63.15	61.28	124.43	0.20
8120	5	4.3	84.99	83.17	168.16	0.67
8125	14	2.2	26.60	25.88	52.48	1.09
8130	1	2.1	145.23	140.99	286.22	2.54
8140	7	2.9	53.68	52.29	105.97	1.42
8145	3	2.4	31.58	31.06	62.64	1.00
9150	248	3.2	239.06	237.30	476.36	0.47
9160	15	3.2	196.43	191.74	388.17	0.80
9320	60	2.4	16.93	16.82	33.75	0.87
9330	134	2.0	38.88	37.90	76.78	0.76
9340	8	1.8	49.52	48.27	97.79	1.40
9350	2	2.7	33.73	32.97	66.70	0.36
9390	51	2.7	74.19	73.90	148.10	3.62
9905	1	0.8	7.17	6.91	14.08	0.24
9925	14	5.3	50.19	49.24	99.42	0.69
9930	3	6.4	45.98	44.80	90.78	1.17
	4618	2.7	141.87	140.08	281.96	2.39

APPENDIX E

DISC Results for Packaging RODs

(by Federal Supply Class (FSC))

DISC

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
2840	1	6.6	2278.77	2602.56	4881.32	7.66
2925	3	2.4	84.58	93.84	178.42	0.55
3110	34	6.3	168.59	193.07	361.66	3.79
3120	32	5.9	108.79	123.88	232.67	5.56
3130	2	6.7	21.48	24.72	46.20	0.67
4010	8	4.6	695.45	789.37	1484.82	18.29
4020	6	7.3	505.51	570.89	1076.40	3.53
4030	2	6.3	467.22	534.02	1001.24	17.26
5305	42	6.5	147.38	174.79	322.17	11.34
5306	30	4.4	78.59	89.24	167.83	4.35
5307	1	18.0	113.94	139.81	253.75	10.04
5310	80	4.3	116.07	136.01	252.08	7.24
5315	11	9.2	252.41	303.39	555.80	25.00
5320	16	6.8	395.51	458.36	853.87	17.71
5325	13	5.9	98.86	118.31	217.16	6.15
5330	384	5.9	52.38	61.94	114.32	4.46
5340	60	5.6	133.16	152.83	286.00	7.68
5360	11	2.6	55.59	61.95	117.54	8.04
5365	44	5.7	70.32	82.03	152.35	7.75
6145	5	5.1	192.35	219.17	411.52	3.42
9505	3	3.7	50.27	56.40	106.67	1.74
9515	1	5.4	12.24	13.88	26.12	0.17
9525	2	4.8	41.20	46.42	87.62	0.67
9530	1	3.4	56.59	63.33	119.92	2.65
9535	1	2.5	5.53	6.16	11.69	0.07
	793	5.8	248.11	284.65	532.77	7.03

APPENDIX F

DPSC (C&T) Results for Packaging RODs

(by Federal Supply Class (FSC))

DPSC-T

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
7210	3	8.3	1049.17	1234.53	2283.70	0.33
8315	2	27.2	1434.01	1830.45	3264.46	3.54
8340	25	12.8	4985.85	6105.65	11091.50	1.38
8405	14	13.0	4131.16	5305.74	9436.91	1.23
8410	3	14.5	1178.13	1485.71	2663.84	0.41
8415	90	6.4	6881.59	7956.50	14838.08	0.77
8420	2	5.5	594.58	677.23	1271.82	0.09
8430	75	11.3	1657.48	1963.18	3620.66	0.21
8455	7	3.4	272.61	307.02	579.63	2.86
8460	9	20.1	1978.33	2460.39	4438.72	0.77
8465	6	8.0	867.09	1038.71	1905.79	0.27
	236	11.9	2275.45	2760.46	5035.92	1.08

APPENDIX G

DPSC (Medical) Results for Packaging RODs

(by Federal Supply Class (FSC))

DPSC-M

FSC	NUMBER OF CLOSED PCKNG RODS WITH COST	AVERAGE PCKNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER PCKNG ROD)	AVERAGE PURE SUPPLY COST (PER PCKNG ROD)	AVERAGE TOTAL COST (PER PCKNG ROD)	PERCENT OF CONTRACT VALUE
4330	2	3.1	346.08	96.33	442.41	9.47
4610	1	7.0	909.12	255.78	1164.90	4.35
5120	1	0.8	2.29	0.63	2.92	0.14
5935	1	2.9	21.83	6.05	27.87	0.41
5975	2	1.3	341.84	94.33	436.17	1.49
6240	1	0.3	1.23	0.34	1.56	0.05
6505	70	3.5	1037.06	291.46	1328.51	1.65
6510	109	3.3	396.60	111.10	507.71	0.91
6515	233	2.6	553.28	154.43	707.71	2.22
6520	19	4.1	81.70	23.00	104.70	0.63
6525	14	6.0	916.53	259.07	1175.60	2.43
6530	107	5.1	766.95	216.75	983.70	1.68
6532	20	3.0	373.91	104.20	478.11	0.92
6540	4	2.0	18.04	4.98	23.02	0.16
6545	10	3.3	488.18	136.08	624.25	0.15
6550	11	5.7	1902.04	542.72	2444.76	5.54
6625	1	10.9	484.79	138.41	623.20	1.75
6630	29	4.4	933.74	271.52	1205.26	5.65
6640	15	3.0	158.18	44.39	202.57	0.93
6840	2	7.5	565.87	159.92	725.79	0.98
7210	4	2.6	683.92	189.12	873.05	0.59
7360	1	0.3	4.66	1.28	5.94	0.01
7520	1	0.5	14.53	3.99	18.51	0.40
7530	2	2.7	220.37	61.51	281.88	2.53
7690	3	1.6	8.16	2.27	10.42	0.48
8110	1	10.5	123.59	35.24	158.83	8.36
8115	3	3.9	270.60	77.09	347.69	3.66
8465	8	2.6	225.90	63.51	289.41	0.92
8530	2	2.3	349.10	96.55	445.66	1.41
9920	1	2.9	3850.38	1066.64	4917.02	25.00
	678	3.7	535.02	150.29	685.30	2.83

APPENDIX H

DLA-Wide Computations and Results for Shipping RODs

Using Table 2 in the main text, the total number of all shipping RODs (resolved and with an associated cost) is:

801	(DCSC)
2,122	(DESC)
2,319	(DGSC)
5,717	(DISC)
16	(DPSC (C&T))
+ 1,356	(DPSC (Med))
12,331	

These individual center ROD tallies are used as weights in determining DLA-wide statistics. For example, an estimate of the total holding cost incurred for a DLA shipping ROD (across all supply centers) becomes:

[(801 DCSC shipping ROD) x ($ 145.30/shipping ROD)
+ (2122 DESC shipping ROD) x ($ 161.37/shipping ROD)
+ (2319 DGSC shipping ROD) x ($ 175.52/shipping ROD)
+ (5717 DISC shipping ROD) x ($ 196.12/shipping ROD)
+ (16 DPSC (C&T) shipping ROD) x ($1944.87/shipping ROD)
+ (1356 DPSC (Med) shipping ROD) x ($ 339.33/shipping ROD)] / 12,331

= $200.48

The same procedure was used for the other result elements. All statistics are provided below:

Average Shipping ROD Age	2.2 months
Average Lost Opportunity Cost (Per Shipping ROD)	$104.83
Average Pure Supply Cost (Per Shipping ROD)	$ 95.65
Percent of Contract Value	2.2 %

APPENDIX I

DCSC Results for Shipping RODs

DCSC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
1005	14	1.6	7.30	7.22	14.52	0.14
1010	4	1.9	5.95	5.76	11.71	0.18
1015	2	5.7	46.06	45.88	91.93	1.74
1020	2	3.0	10.94	10.67	21.61	0.63
1095	9	1.7	5.97	5.78	11.75	0.11
1615	2	4.3	13.57	13.24	26.81	0.20
1650	11	4.2	86.19	86.22	172.41	1.51
1730	3	4.2	21.91	21.82	43.73	0.70
2010	2	2.7	11.11	10.80	21.91	0.21
2510	16	3.4	13.27	13.12	26.38	0.32
2520	25	2.7	18.03	17.84	35.87	0.56
2530	20	5.8	50.34	60.98	111.32	2.08
2540	15	1.8	5.88	5.73	11.61	0.14
2590	31	2.8	27.82	27.29	55.11	0.90
2805	2	0.8	2.00	1.92	3.93	0.13
2815	18	3.3	31.43	31.61	63.03	1.05
2825	4	5.5	219.84	218.05	437.89	6.54
2910	18	8.1	30.15	37.69	67.83	1.11
2920	19	2.2	6.94	6.79	13.73	0.20
2930	13	3.6	13.00	12.77	25.76	0.52
2940	26	5.3	57.12	60.80	117.92	2.69
2990	13	9.3	10.03	10.05	20.08	0.60
3010	8	3.9	14.57	14.30	28.87	0.50
3020	21	7.8	48.94	52.94	101.88	1.59
3030	14	7.0	48.34	50.52	98.86	7.21
3040	32	4.4	37.03	36.96	73.98	1.62
3740	5	3.4	164.66	165.73	330.39	1.87
3805	1	0.4	24.71	23.75	48.46	1.81
3820	3	1.4	21.82	21.17	42.98	0.45
3825	2	1.0	9.00	8.70	17.70	0.02
3830	2	12.4	32.04	33.42	65.46	1.31
3950	2	2.3	706.89	692.18	1,399.07	20.70
4210	15	2.3	59.04	58.06	117.10	0.53

APPENDIX J

DESC Results for Shipping RODs

DESC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
1240	4	7.2	145.61	189.28	334.89	2.73
1260	1	2.6	10.18	12.78	22.96	0.27
1270	1	4.9	1.27	1.61	2.88	0.05
1280	1	1.6	19.36	24.12	43.49	0.88
1420	3	2.5	8.71	10.92	19.63	0.21
1430	2	4.4	2.58	3.28	5.85	0.07
1440	7	6.1	242.16	312.20	554.36	6.51
1660	11	4.4	291.33	395.88	687.21	8.28
4935	1	2.2	0.02	0.03	0.05	0.00
5805	21	2.8	102.66	131.64	234.30	1.02
5815	2	3.4	17.32	21.59	38.91	0.61
5820	3	4.8	206.41	270.60	477.01	5.41
5821	2	4.3	66.88	83.91	150.79	4.13
5826	3	3.6	47.50	60.13	107.63	0.66
5835	6	2.8	16.71	20.94	37.65	0.16
5836	1	17.0	34.86	48.18	83.04	0.46
5840	3	9.7	252.27	361.49	613.76	7.18
5841	5	5.2	54.71	73.54	128.25	0.82
5845	3	6.4	57.62	74.39	132.01	0.50
5850	1	1.8	16.77	20.92	37.69	0.24
5855	3	1.7	0.65	0.81	1.46	0.01
5865	3	2.1	10.23	12.86	23.09	0.15
5895	23	2.7	70.34	89.21	159.55	1.21
5905	147	5.4	19.50	26.06	45.56	2.62
5910	56	4.5	10.25	13.36	23.61	1.85
5915	38	3.9	37.65	47.90	85.55	1.52
5920	71	3.6	10.17	13.00	23.16	1.00
5925	56	4.0	18.89	24.31	43.20	0.84
5930	192	4.4	22.44	29.26	51.70	1.21
5935	474	3.9	27.89	38.34	66.23	2.69
5945	149	3.4	34.85	45.07	79.91	0.98
5950	78	4.2	29.59	37.93	67.52	1.81
5955	13	4.3	24.03	30.71	54.74	1.67

DESC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
5960	52	3.5	64.17	82.47	146.64	0.25
5961	104	4.2	20.52	26.29	46.81	1.91
5962	110	3.8	35.41	45.43	80.84	2.63
5963	9	4.4	194.60	249.07	443.67	6.13
5965	40	3.3	34.77	44.04	78.81	0.38
5980	13	4.6	29.92	37.44	67.36	1.73
5985	118	3.2	37.60	48.09	85.69	0.87
5990	7	5.1	66.18	86.64	152.82	1.23
5995	1	5.7	201.17	257.57	458.74	6.67
5998	54	3.4	39.81	50.45	90.26	1.05
5999	65	2.6	9.63	12.17	21.80	0.82
6060	1	0.7	12.13	15.02	27.14	0.81
6625	85	3.2	43.07	54.52	97.59	1.89
7010	2	11.9	119.04	159.13	278.17	2.81
7025	28	6.3	40.34	51.49	91.83	0.50
7030	2	11.5	584.33	810.15	1394.48	23.69
7035	15	8.3	60.81	80.04	140.85	1.46
7045	30	5.6	27.22	36.56	63.78	0.37
7050	2	4.0	82.76	103.37	186.14	1.49
	2122	4.6	69.52	91.85	161.37	2.20

APPENDIX K

DGSC Results for Shipping RODs

DGSC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
1055	3	2.2	4.75	4.66	9.40	0.13
1560	90	3.1	84.60	84.47	169.07	1.64
1670	4	0.5	13.05	12.55	25.59	0.05
1680	29	2.2	122.46	121.72	244.18	1.82
2030	1	6.6	68.11	67.88	135.99	2.61
2040	15	3.7	156.06	156.71	312.77	1.53
2090	6	1.0	27.36	26.35	53.71	0.24
3230	3	2.0	2.98	2.93	5.91	0.53
3413	2	2.2	17.91	17.44	35.35	0.23
3415	2	7.8	715.05	717.58	1432.63	20.77
3416	1	2.1	6.34	6.16	12.50	0.15
3417	2	0.7	4.97	4.78	9.75	0.14
3419	1	1.2	0.22	0.22	0.45	0.00
3424	1	5.9	56.01	55.60	111.62	0.65
3426	1	0.9	5.59	5.38	10.97	0.50
3431	5	1.6	7.50	7.24	14.74	0.18
3433	5	6.2	69.45	72.93	142.38	4.18
3439	61	3.4	92.14	92.43	184.57	3.00
3441	2	2.7	174.49	170.88	345.37	4.23
3444	1	6.0	79.82	79.27	159.09	0.76
3445	1	36.9	162.90	193.91	356.81	4.11
3455	33	3.6	7.99	8.01	16.00	0.70
3456	1	2.9	5.71	5.57	11.28	0.55
3460	18	1.9	6.83	6.67	13.50	0.53
3510	11	4.3	8.18	8.10	16.29	0.69
3530	2	13.2	23.17	22.55	45.72	0.57
3610	25	5.1	71.10	71.68	142.78	1.12
3611	1	0.5	0.45	0.44	0.89	0.01
3615	1	3.6	98.67	96.64	195.31	0.64
3655	2	1.5	29.11	28.15	57.26	0.38
3694	1	3.3	43.40	42.45	85.85	0.96
3695	2	3.3	94.45	91.83	186.28	1.89
3920	5	2.8	32.84	31.79	64.63	0.28

DGSC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
3940	6	3.3	32.54	31.86	64.40	0.33
3990	9	2.5	47.09	45.77	92.85	0.33
4110	7	2.7	316.17	309.30	625.47	1.33
4120	2	4.2	182.31	179.43	361.74	0.48
4130	38	3.3	17.00	16.65	33.64	0.72
4140	7	4.3	21.94	21.68	43.62	0.50
4240	67	2.9	17.94	17.66	35.60	0.35
4920	15	2.4	9.97	9.74	19.71	0.23
4933	2	1.8	43.87	42.33	86.20	1.02
5220	6	2.3	7.68	7.49	15.17	0.51
5355	32	4.3	8.69	8.78	17.46	1.00
5940	64	4.3	13.53	13.45	26.98	0.73
5970	101	3.3	22.35	22.26	44.61	1.54
5975	96	3.7	33.34	33.07	66.41	1.82
5977	21	3.7	30.71	30.39	61.10	0.78
5995	109	2.6	22.66	22.43	45.09	0.59
6105	72	1.8	44.14	44.12	88.26	0.68
6110	20	1.6	48.48	47.19	95.68	0.89
6115	9	1.2	8.83	8.56	17.39	0.09
6120	1	1.8	7.47	7.24	14.70	0.16
6125	2	0.4	20.02	19.25	39.28	0.13
6130	39	1.8	39.80	41.36	81.17	0.81
6135	42	6.8	63.38	62.66	126.04	1.17
6140	32	5.0	700.06	702.82	1402.87	7.24
6150	60	2.6	42.61	41.76	84.37	1.35
6160	3	0.9	40.93	39.69	80.62	0.89
6210	64	4.2	25.92	25.75	51.66	1.21
6220	33	3.0	27.51	26.80	54.31	0.65
6230	23	2.6	47.75	46.64	94.39	0.42
6240	242	2.5	7.67	7.51	15.18	0.43
6250	12	2.6	33.55	32.69	66.25	1.40
6260	8	1.7	28.62	27.70	56.32	0.08
6320	1	0.7	79.06	76.09	155.15	0.78

DGSC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
6340	1	0.7	28.57	27.49	56.06	0.38
6350	11	3.2	20.53	20.07	40.60	0.43
6605	4	1.9	22.04	21.48	43.52	0.54
6610	3	2.7	43.33	42.24	85.57	0.75
6615	2	4.1	147.10	144.42	291.52	1.76
6620	14	3.5	1823.40	1879.58	3702.98	22.39
6635	17	3.5	81.43	80.41	161.83	2.46
6645	12	3.1	13.89	13.55	27.44	0.29
6650	26	2.1	20.26	19.77	40.03	0.70
6655	2	0.6	153.29	147.60	300.89	0.52
6660	10	6.2	11.68	11.75	23.43	0.13
6665	31	2.6	31.59	33.89	65.49	0.65
6670	6	2.0	3.90	3.79	7.68	0.09
6675	10	1.3	8.10	7.85	15.96	0.24
6680	29	3.2	43.47	43.55	87.02	1.28
6685	75	5.5	72.13	76.23	148.37	2.18
6695	10	3.4	70.25	68.90	139.15	1.32
6720	1	3.0	2.13	2.08	4.21	0.02
6730	11	4.0	416.26	414.43	830.68	3.88
6740	6	6.6	17.66	17.44	35.10	0.78
6750	91	5.4	61.89	66.37	128.25	2.70
6760	4	4.1	4.91	4.83	9.73	0.13
6810	40	2.4	41.60	40.79	82.39	0.28
6830	4	1.2	276.70	268.17	544.87	0.24
6840	12	2.5	110.42	108.62	219.03	0.31
6850	78	3.9	113.35	112.64	226.00	0.64
6920	1	4.2	2.87	2.83	5.70	0.03
6930	3	4.3	62.66	62.87	125.53	4.64
7105	2	1.9	1.02	0.99	2.01	0.00
7240	1	1.7	16.50	15.98	32.49	0.01
7310	13	4.1	72.25	73.74	145.99	0.65
7320	6	4.0	64.11	64.42	128.53	1.01
7330	1	18.3	377.97	403.40	781.38	0.34

DGSC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
7530	2	1.6	465.95	451.31	917.26	0.64
7610	7	3.4	27.35	27.12	54.47	2.26
7690	19	3.5	8.70	8.50	17.20	1.02
8110	27	3.9	181.63	180.00	361.63	0.58
8120	5	3.7	8.75	8.56	17.31	0.07
8125	10	3.7	82.72	82.04	164.75	3.42
8140	1	4.9	20.47	20.19	40.66	0.55
8145	5	1.8	44.06	42.72	86.77	1.38
9150	46	5.7	200.33	228.94	429.28	0.43
9160	2	5.0	12.73	12.55	25.29	0.05
9320	25	2.7	5.97	5.81	11.78	0.30
9330	25	4.0	50.41	52.38	102.79	1.02
9340	9	4.8	41.73	41.63	83.36	1.19
9390	12	2.8	7.52	7.39	14.91	0.36
9925	4	4.2	185.17	185.18	370.35	2.57
	2319	3.6	87.44	88.08	175.52	1.40

APPENDIX L

DISC Results for Shipping RODs

DISC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
1560	1	18.5	0.01	0.01	0.02	0.00
2810	1	6.0	0.20	0.22	0.42	0.01
2835	29	4.5	164.77	193.93	358.70	1.58
2840	116	4.0	145.66	166.41	312.07	0.49
2915	8	4.4	72.60	83.51	156.11	0.64
2925	12	3.4	389.56	437.20	826.75	2.55
2935	2	10.7	155.37	183.46	338.83	1.23
2945	8	4.5	133.98	152.72	286.69	2.46
2950	4	2.7	100.92	113.77	214.69	2.42
2995	13	2.1	113.53	126.48	240.01	0.98
3110	112	6.0	121.45	153.33	274.78	2.88
3120	106	6.0	59.57	70.18	129.75	3.10
3130	15	2.3	52.24	58.19	110.43	1.60
4010	81	3.6	79.90	90.97	170.87	2.10
4020	74	3.1	88.43	100.29	188.72	0.62
4030	30	3.0	29.78	33.70	63.49	1.09
5305	587	3.9	90.92	125.51	216.43	7.62
5306	445	3.9	46.27	55.11	101.38	2.63
5307	44	2.7	12.27	13.79	26.06	1.03
5310	779	4.0	37.01	43.27	80.28	2.31
5315	258	4.3	63.83	73.28	137.11	6.35
5320	590	2.9	64.46	73.43	137.89	2.86
5325	172	3.4	35.56	41.51	77.07	2.18
5330	832	4.2	31.14	35.80	66.95	2.61
5335	6	2.6	66.69	74.94	141.63	2.41
5340	640	3.8	29.98	34.56	64.55	1.73
5360	79	6.5	39.99	48.04	88.03	6.02
5365	217	5.6	29.53	34.43	63.95	3.25
6145	308	3.9	42.53	50.33	92.86	0.77
9505	6	2.4	5.81	6.50	12.32	0.20
9510	22	3.8	558.36	648.83	1207.20	21.53
9515	30	8.3	257.14	323.07	580.21	3.70
9520	15	3.7	80.48	90.98	171.46	1.84

DISC

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
9525	2	1.8	4.80	5.34	10.14	0.08
9530	38	4.4	55.25	63.68	118.94	2.62
9535	19	4.4	158.63	180.43	339.06	1.90
9540	15	4.9	21.43	24.67	46.10	1.42
9650	1	4.9	0.28	0.30	0.58	0.00
	5717	4.6	90.54	105.58	196.12	2.60

APPENDIX M

DPSC (C&T) Results for Shipping RODs

DPSC-T

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
8415	16	11.4	876.31	1,068.56	1,944.87	0.10

APPENDIX N

DPSC (Medical) Results for Shipping RODs

DPSC-M

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
3770	1	14.2	1.41	0.40	1.81	0.10
4540	1	61.7	423.04	145.91	568.94	19.46
4720	2	12.0	219.43	65.69	285.12	1.61
5110	2	35.1	49.53	15.80	65.32	16.00
5315	1	1.8	0.44	0.12	0.56	5.00
5330	1	4.6	0.07	0.02	0.09	0.02
5930	2	0.9	0.02	0.01	0.02	0.00
5935	1	1.5	34.40	9.47	43.88	0.64
5945	1	1.9	0.07	0.02	0.09	0.00
5999	3	7.9	5640.31	1598.22	7238.53	19.46
6130	1	4.0	19.13	5.32	24.45	0.14
6140	3	2.5	26.48	7.37	33.85	0.44
6230	3	1.6	2.81	0.78	3.59	0.01
6240	3	6.7	13.30	3.88	17.18	0.51
6505	598	3.9	121.95	41.33	163.28	0.20
6508	1	1.6	5.42	1.49	6.91	0.05
6510	33	4.3	43.71	12.29	56.01	0.10
6515	292	3.9	69.47	19.71	89.18	0.28
6520	82	3.6	9.18	2.58	11.76	0.07
6525	44	4.4	50.91	15.04	65.95	0.14
6530	48	6.2	53.29	16.16	69.45	0.12
6532	20	2.6	26.23	7.32	33.55	0.06
6540	41	5.5	23.92	7.06	30.98	0.21
6545	18	7.6	1396.40	392.68	1789.08	0.42
6550	66	4.5	47.46	13.15	60.61	0.14
6630	16	4.8	1245.66	373.34	1619.00	7.59
6640	24	5.5	12.53	3.55	16.08	0.07
6650	1	0.7	0.00	0.00	0.00	0.00
6665	6	5.5	32.92	9.16	42.09	0.19
6670	1	1.4	0.58	0.16	0.75	0.00
6680	3	11.1	145.07	44.83	189.90	0.63
6810	3	4.2	1.53	0.43	1.95	0.02
6830	1	1.5	0.69	0.19	0.87	0.01

DPSC-M

FSC	NUMBER OF CLOSED SHPNG RODS WITH COST	AVERAGE SHPNG ROD AGE (MONTHS)	AVERAGE LOST OPP COST (PER SHPNG ROD)	AVERAGE PURE SUPPLY COST (PER SHPNG ROD)	AVERAGE TOTAL COST (PER SHPNG ROD)	PERCENT OF CONTRACT VALUE
6840	2	2.2	0.37	0.10	0.47	0.00
6850	4	1.1	3.52	0.97	4.48	0.01
7210	2	23.0	2716.05	835.60	3551.65	2.42
7360	1	0.5	1.04	0.29	1.32	0.00
7530	4	1.9	1.77	0.48	2.25	0.02
7610	2	8.5	68.05	18.89	86.94	2.88
7690	7	8.5	7.04	2.14	9.18	0.42
7930	2	5.5	9.57	2.67	12.24	0.14
8105	1	16.1	8.15	2.37	10.53	0.08
8110	1	6.1	5.54	1.56	7.10	0.37
8115	1	0.8	9.55	2.62	12.18	0.13
8430	1	1.6	0.79	0.22	1.01	0.01
8465	1	2.1	40.83	11.27	52.11	0.17
8540	2	1.8	3.09	0.86	3.95	0.01
9320	2	1.0	1.09	0.30	1.39	0.08
	1356	6.7	262.37	76.95	339.33	1.70